NOLOGY DEPT!

TEXTILE WORLD

McGraw-Hill Publication ---------- DECEMBER • 1945

A REPORT ON RAMIE

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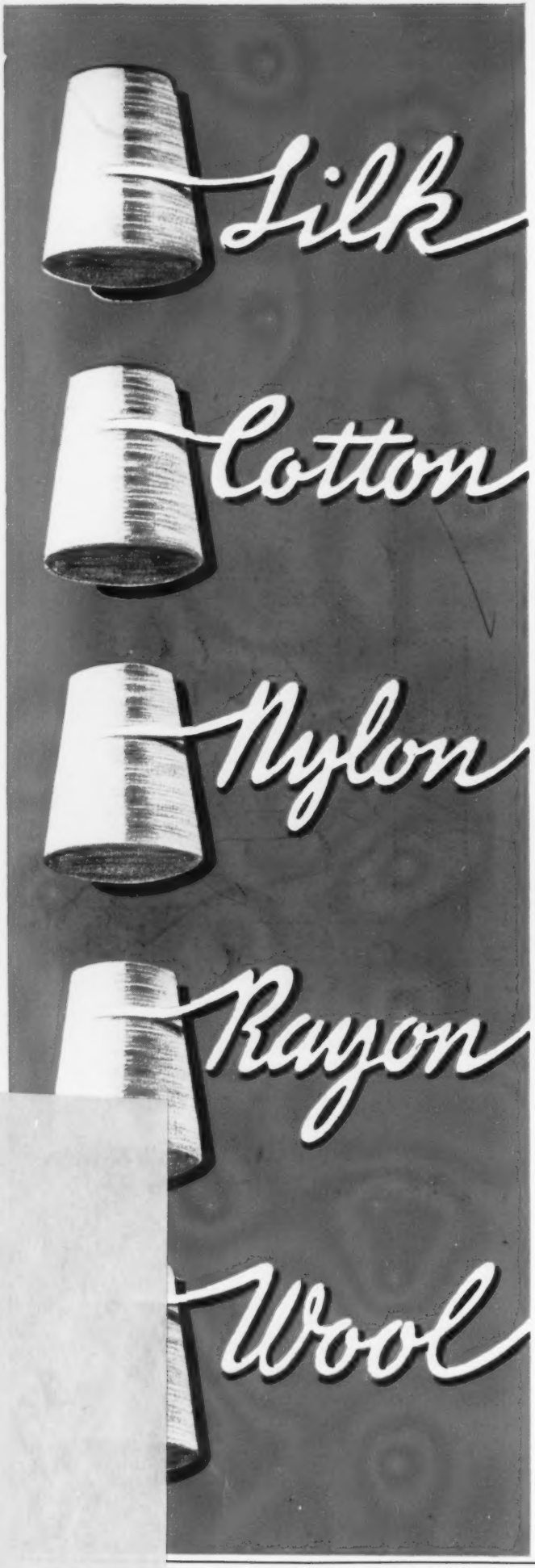
Also in this issue... Running RAYON on the WOOLEN SYSTEM PAGE 100



America's great textile industry is a loom that weaves progress and prosperity into our national life. For the past 27 years, Robert and Company has grown with this industry, supplying engineering services for design and modernization of textile plants and communities. Within our own organization we have handled all details of appraisals, machinery layouts, power plants, air-conditioning, water treatment and sewerage. Today, we have the experience and vision to help the textile industry build soundly and profitably for the future. We invite your inquiries.

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ATLANTA

TWENTY-SEVEN YEARS NATIONWIDE EXPERIENCE IN INDUSTRIAL AND TEXTILE DEVELOPMENT

Vol. 95, No. 12, December, 1945. Published monthly by McGRAW-HILL PUBLISHING CO., INC. (Bragdon, Lord & Nag
on Office, 99-129 North Broadway, Albany, N. Y. RETURN POSTAGE GUARANTEED. Editorial and Executive Office
, (18) N. Y. Allow at least ten days for change of address.
l States and Possessions, and Latin American Republics, $1.50 a year, $2.00 for two years, $3.00 for three years. Canad
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for Much Greater Output

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★ Resist hunting and lagging

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FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON SUNDAY NIGHTS ★ METROPOLITAN OPERA BROADCASTS SATURDAY AFTERNOONS

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TEXTILE WORLD

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A McGRAW-HILL PUBLICATION

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Published monthly. United States and Possessions and Latin American Republics, $1.50 a year; Canada and all other countries, $2 U. S. currency or 12 shillings. Single copy, 25c. Please indicate position and company connection on all subscription orders. Annual index in "Textile World Yearbook & Catalog."

McGRAW-HILL PUBLISHING CO., INC. Publication Office, 99 N. Broadway, Albany 1, N. Y. Editorial and Executive Offices, 330 W. 42nd Street, New York 18, N. Y.—JAMES H. McGRAW, *Founder and Honorary Chairman;* JAMES H. McGRAW, Jr., *President;* CURTIS W. McGRAW, *Senior Vice-President and Treasurer;* HENRY G. LORD, *Vice-President;* HOWARD EHRLICH, *Vice-President for business operations;* WILLARD CHEVALIER, *Vice-President for editorial operations;* J. A. GERARDI, *Secretary;* J. E. BLACKBURN, *Director of Circulation.*

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Of this issue 19,160 copies were printed

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THE *Long-Range View*

Too Many SAMPLES—Why?

Making samples is a considerably greater burden to many mills than it need be. Hundreds of samples are made, but very few go into production. Probably the most onerous samples are those which are made to match a swatch of competitor's fabric—usually with the admonition to do it cheaper.

Many a supervisor has seen his department—and budget, if he has one—wrecked by a series of samples that just had to be rushed through. Resistance has often developed to such an extent that special sample men have been needed, or special sample departments have had to be set up. The cost of an entirely new sample—as distinct from a variation of a production number—has been estimated by one fine-goods mill to be $500. Only estimates of such costs can be given, except in the case of the few concerns which operate sample departments entirely separate from the balance of the mill.

Costs of samples will vary, but in the aggregate they represent a huge burden on the industry. This burden is by no means equitably distributed. Some mills have virtually none, because they never originate designs. This fact does not necessarily mean that they steal their fabric designs from others—they might be operating on staples or might be using designs developed, for example, by a rayon producer. The unfair part is that the costly samples which many mills do create become soon, in effect, public property.

The only way originators can operate successfully is to produce new designs faster than competitors can copy. Theoretically, progressive mills should be able to produce and promote designs that are so distinctive that imitators will have difficulty in copying them or cannot duplicate them without easy detection; but in practice this goal is practically unattainable. Most objectionable sample making stems from copyists who want to get on the bandwagon or "do it cheaper."

Such a situation is possible because we have no laws adequate to protect designs—textile or other. Designs can be patented; and, since the patent office realizes the importance of speed, only 21 to 30 days are now required. But patents cannot be upheld unless novelty or invention can be proved. Something more nearly like copyrighting is needed, wherein the main thing that must be shown to obtain protection is authorship. For textiles, action should be taken within 48 hours, as it was under the 1928 Design Registration Bureau. Copyrighting has the necessary element of speed, but a 1929 court decision has stated that "the exclusive right to make and sell such articles [textile] should not be sought by copyright law."

There have been many attempts within the textile industry itself to protect original designs, including efforts made by the Fashion Originators Guild and the National Federation of Textiles; but the Supreme Court ruled in 1941 that industry-wide action on design protection was in violation of the Sherman Act, the Clayton Act, and the Federal Trade Commision Act.

It seems that the only resort left is an appeal to Congress, since current laws prohibit adequate design protection by the industry. Approximately 35 attempts have been made since 1914 to facilitate design protection; and two, the Vestal Bill and the Sirovich Bill, came close to becoming laws and could be quickly revived. Both are intended to permit design protection along the lines of copyrighting.

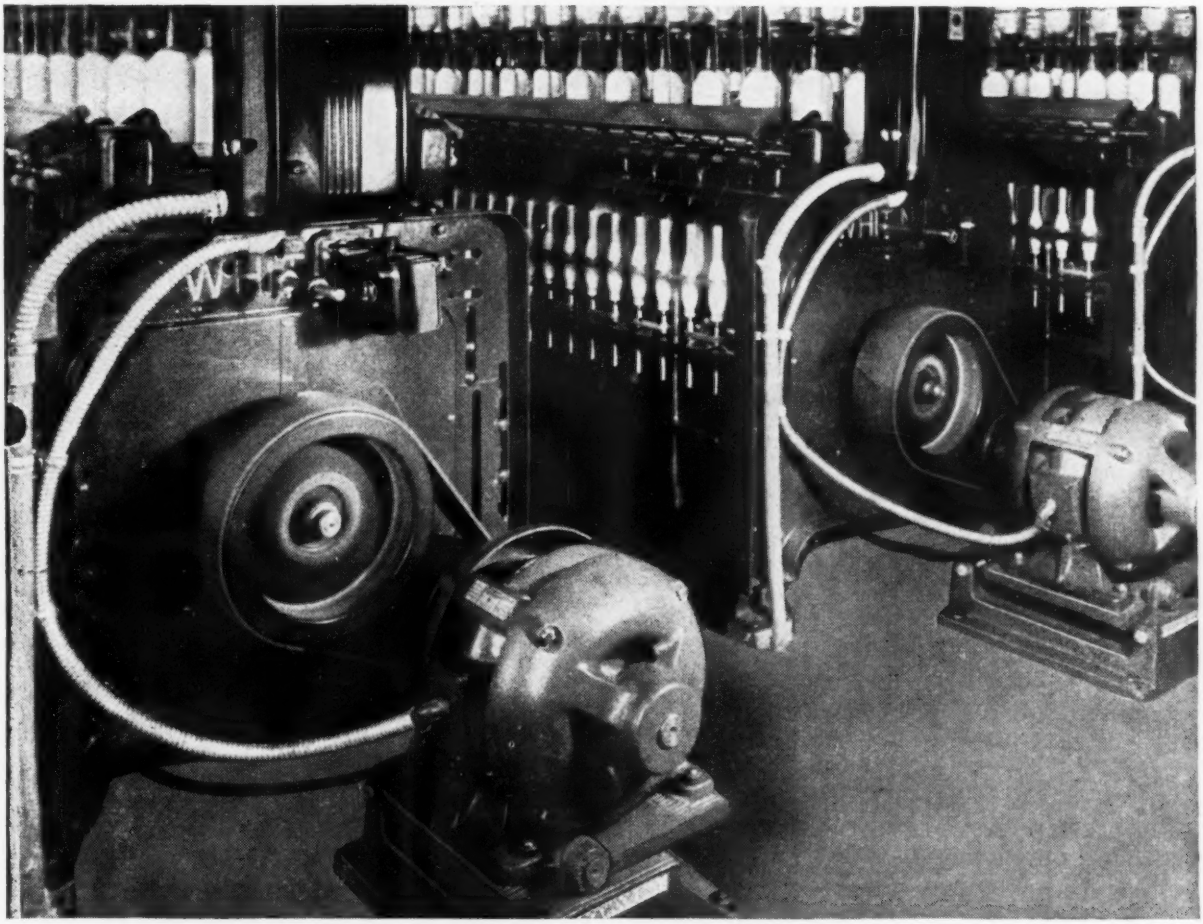
The Sirovich Bill was largely to protect textile designs, but the Vestal went into the broader aspect of designs in general. Either bill, if passed, would provide more protection than now is readily obtainable. An alternative would be legislation which would permit the industry to set up its own protection, but this is hardly possible in light of the anti-trust laws. The situation is that of laws begetting more laws.

The popular appeal being made to establish such legislation is based on the help which it might render to the development of a style center in the United States. The appeal made to practical mill men is based on a reduction in sample costs and on a greater reward to originators of designs. On moral grounds, the appeal is of course the prevention of stealing—or piracy, as some call it.

The industry cannot condone the present practice of stealing designs without admitting moral delinquency, which always is the forerunner of degeneration. The course seems clear—agitation for and support of legislation to do the job the industry is prohibited from doing for itself.

C. H. Bendigo

HOW TO MAINTAIN *EFFICIENCY* IN YOUR DRIVES . . .



The secret of drive efficiency is correct belt tension, plus strong, tough, resilient, durable Tannate leather belting.

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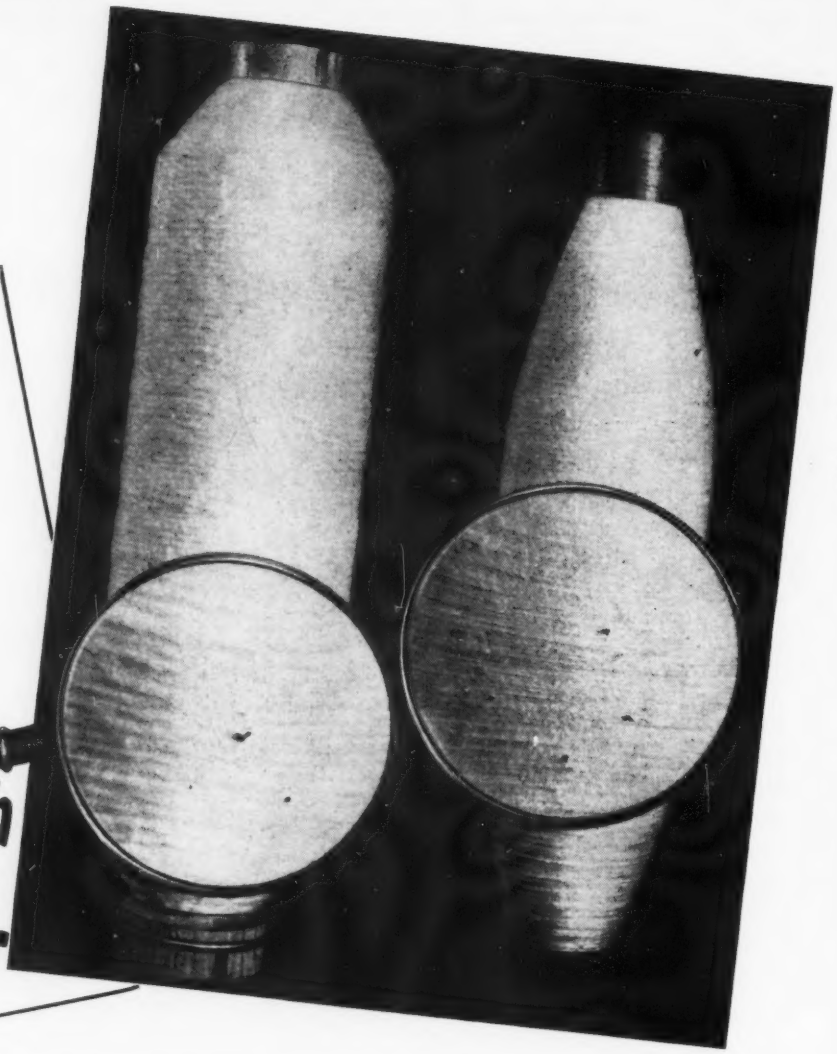
RHOADS *Tannate* **WATERSHED LEATHER BELTING**

3 ways to remove impurities before they reach this far . .



1 #11 DUST AND WASTE EXTRACTOR

2 CONTINUOUS STRIPPER

3 WASTE CONTROL SCREEN

The complete elimination of every single impurity in a finished yarn package is an achievement to be desired. But many of the impurities which do get through can be eliminated if proper steps are taken at certain strategic points.

The Saco-Lowell #11 Dust and Waste Extractor is the first point of attack against these minute particles. Here the great bulk of fine peppery leaf and dirt is removed. The next point of attack is at the card. Here, by using a "combat team" composed of the Continuous Stripper and the Waste Control Screen, it is possible to keep the cylinder wire in such an active condition that there is a definite reduction in the amount of nep, leaf and other impurities in the web.

As a means of estimating the amount of impurities that are now "getting by" we suggest you make a nep and leaf count on ten square inches of cloth. Should you find this count too high our engineers may be able to make some helpful recommendations.

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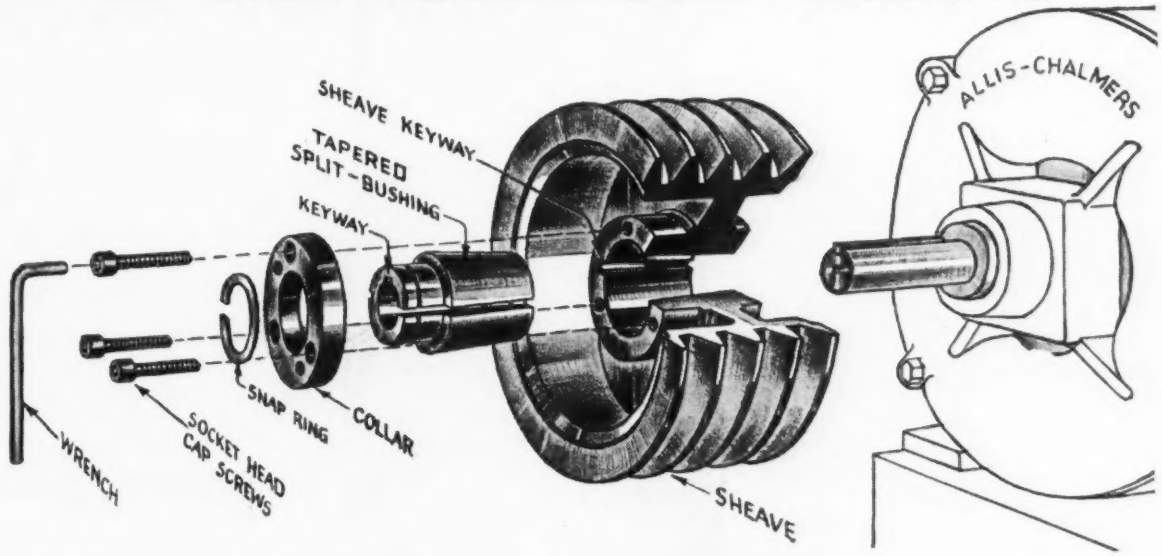
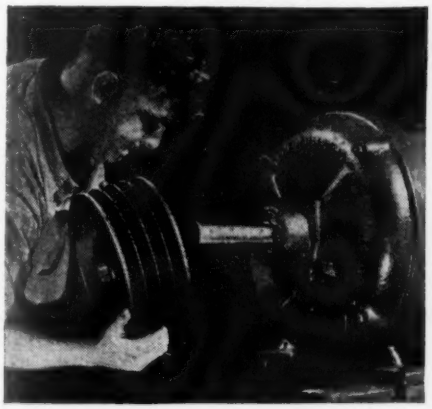
Here's the Inside Story

OF THE "MAGIC-GRIP" SHEAVE

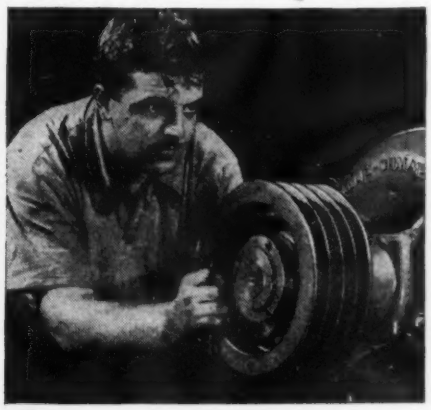


Exploded view shows why Allis-Chalmers' new "Magic-Grip" Sheave goes on *as a unit in 2 easy steps.* It's the fastest mounting sheave on the market—at no extra cost.

SEE HOW "MAGIC-GRIP" GOES ON QUICKLY AS A UNIT IN 2 EASY STEPS



1 Place sheave on shaft. Slides on smoothly because clearance is provided by expanded bushing. There's *no* hammering — *no* forcing! Complete sheave and bushing unit comes intact—ready for quick, easy mounting.



2 Align exactly, using straightedge, (It's easy with this free-sliding sheave.) Then tighten three capscrews; sheave is locked to shaft, *grips like magic!* No set screws to damage the shaft. Write for Bulletin B6310.

RECONVERTING?

GET THIS NEW FREE KIT!

To help you find out how your present equipment will fit into future production, A-C offers a new free "Reconversion Inventory Kit" — Fact Sheets and Check Lists to speed your appraisal of V-belt drives, electric motors, and centrifugal pumps. Applies to all makes. Call your A-C distributor or district office, or write Dept. 49, ALLIS-CHALMERS MFG., Milwaukee 1, Wisconsin.

A 1858

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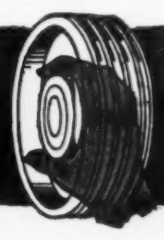
"MAGIC-GRIP"  **SHEAVES**

HEAR THE BOSTON SYMPHONY: *Saturday, American Broadcasting Co.*

A Milestone in Hosiery History...

THE *New Style Nylon* STOCKING

made exclusively by Scott & Williams machines

A QUALITY PRODUCT

Quality is the watchword in every detail governing the production and promotion of this new nylon stocking with its revolutionary gusset heel and toe for precision fit. The NEW STYLE NYLON stocking will be outstanding in beauty as well as in smooth-fitting, no-seam comfort, and its luxurious quality will appeal to the better stores and to women of discriminating taste. The standards of NEW STYLE NYLON quality will be continuously checked by an accredited testing laboratory for fabric, workmanship, fit, comfort and lasting wear.

MADE OF NYLON BY LEADING MANUFACTURERS

The nation's leading hosiery manufacturers will be licensed to make these exquisite nylon stockings and to use an identifying seal on their own packaging, in their own advertising and in conjunction with their own established brand names. The seal, easily identifying the type of hosiery construction, will supplement the maker's own brand name.

INTENSIVE ADVERTISING PROGRAM

The identifying seal will be featured prominently in Scott & Williams' intensive national consumer advertising campaign, which will break in the spring of 1946. Through Class Magazines and radio, the story of these NEW STYLE NYLONS will be carried to the women of America in one of the largest hosiery advertising campaigns ever launched.

AVAILABLE IN SPRING OF 1946

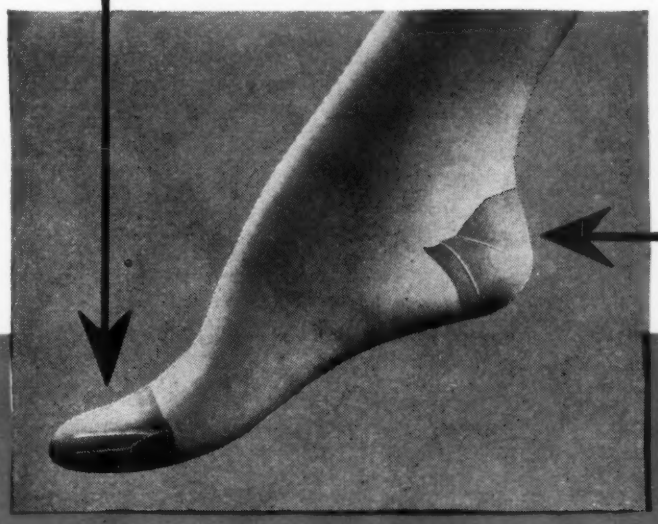
The NEW STYLE NYLON stockings will be available to the retail trade in limited quantities in the spring of 1946. Production is then expected to increase steadily as more and more Scott & Williams' machines are completed and put into service.

COMPLETE FOOT COMFORT

is assured the wearer of the NEW STYLE NYLON hosiery because the right angles formed by the gusset wales and the wales of the toe fabric provide the only method of giving the toe of the stocking ample fabric stretch in both length and width. The gusset fabric knitted into each side of the toe section gives added volume where it is needed most. These are also patented features.

THE SECRET OF PERFECT FIT

of the Scott & Williams stocking lies in its patented heel construction which smooths away wrinkles across the foot, ankle and instep. The right-angled direction of the wales (vertical stitches) at the beginning and end of the heel tends to prevent heel slippage, and the exclusive angled wales provide ample two-way stretch for real comfort.



The beauty of the Scott & Williams stocking is enhanced and its gossamer-like sheerness is further emphasized by the absence of troublesome leg seams. The wearer will have no twisted seams to worry about or to detract from the glamour of the stocking itself. Comfort is increased by the absence of seams along the sole of the foot.

SCOTT & WILLIAMS, INC.

EMPIRE STATE BUILDING . NEW YORK 1, N. Y.

DIVISIONAL OFFICES: High Point, N. C. . Reading, Pa. . Chattanooga, Tenn.

How SYTON makes good cotton fabrics better . . .

1. Controls slippage
2. Imparts crisp, quality finish
3. Increases body of light goods
4. Gives delustered appearance

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In light woven cottons, marquisettes, etc. (as well as rayons, silks, satins, glass cloths, etc.) the old fabric shift problem has been answered by Syton* W20, Monsanto's new inorganic silica sol, with a totally new . . . and proved . . . approach.

How Syton W20 Controls Slippage

Syton W20 is a highly modified polymerized silica dispersion . . . actually highly purified submicroscopic (diameter 1/400,000th of an inch) particles suspended in water. As fabrics are dipped in a solution of Syton these tiny fibrils penetrate the fibers, leaving there a continuous deposit that greatly increases the co-efficient of friction between fibers. This friction eliminates or greatly reduces the destructive shifting of warp and filler threads under abrasion or tension.

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In addition a Syton treatment leaves the fabric supple and resilient, provides a crisp quality finish, a delustered appearance, increased body and improved "hand" . . . all marketable advantages for your cotton fabrics.

* * *

Syton treatment requires no special equipment, no heat, no after-treatment. Syton is compatible with other finishing agents, dye stuffs and resins.

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CHEMICALS AND PLASTICS

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Where do we begin?
Who should handle the job?
What do we need to start?
How can we keep our parts stock small?
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What are the tolerances?

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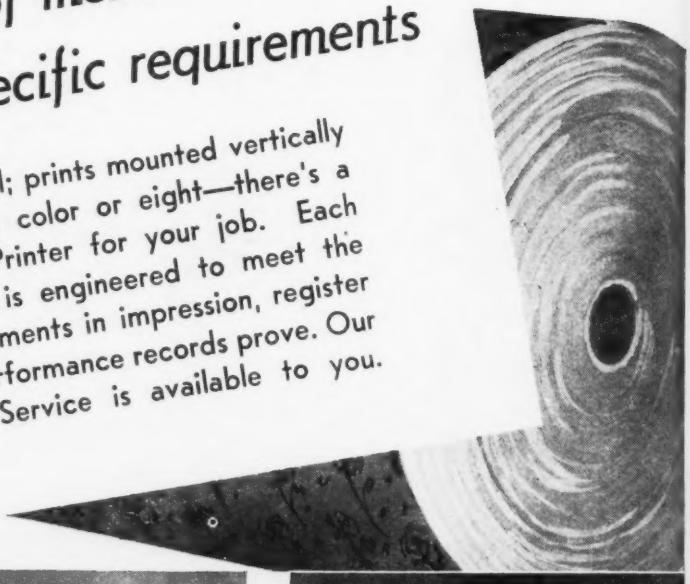
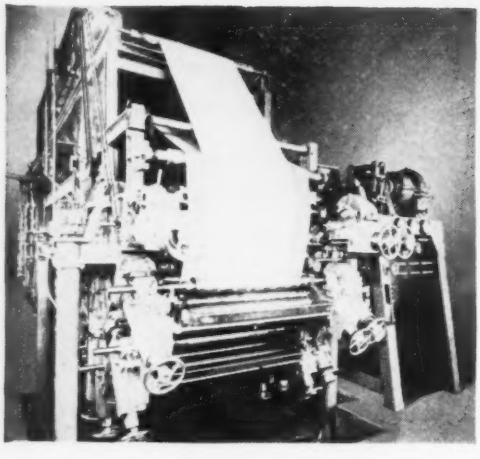
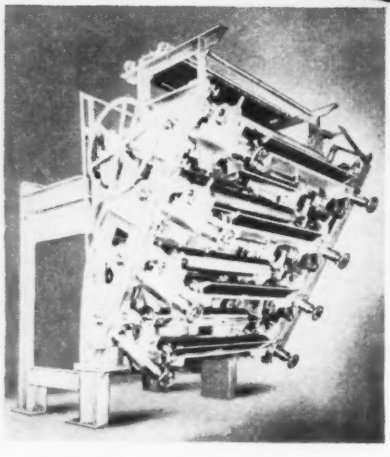
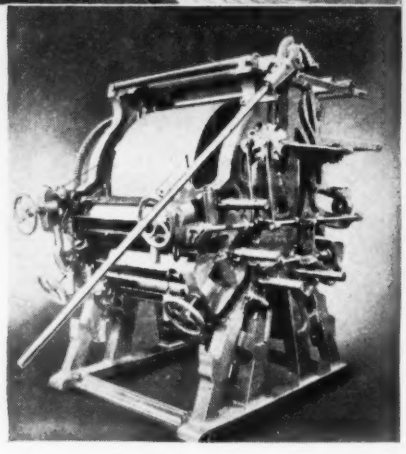




Waldron 8 color intaglio printer, individual impression roll type. Small diameter backing roll allows sharper impression on material being printed.



Waldron intaglio printer with prints mounted in vertical position instead of around portion of an arc.



Waldron 6 color engraved roll printer with colors grouped around a large master impression cylinder. Ideal where very close register is essential.

JOHN WALDRON CORP.

Main Office & Works – NEW BRUNSWICK, NEW JERSEY

CHICAGO - 6
201 N. WELLS ST.

NEW YORK - 17
350 MADISON AVE.

BOSTON - 9
79 MILK ST.

BUILDERS OF QUALITY MACHINES SINCE 1827

10 Drops of Oil Every 4 Years!

Roll Stand Mount in Saco-Lowell Twister Frame in plant of Owens-Corning Fiberglas Corporation. Bearing is accessible for relubrication, without removal of split housing as shown.

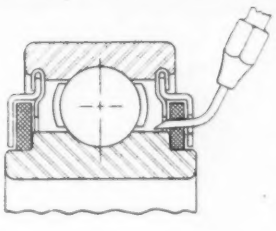
● Wouldn't you like to have ball bearings in your machine that are self-sealed against entrance of dirt and leakage of lubricant—yet which need no relubrication for greatly extended periods?

This New Departure offers you, together with several exclusive features:

Revitalization of the lubricant (in this case only 10 drops per bearing every 4 years), is easily, quickly and economically done as illustrated—without removing the bearing or its seals and without need for nipples, grease passages or plugs.

Ask for Booklet IB describing in detail the revolutionary features of this injection method of relubrication in New Departure self-sealed ball bearings.

How the New Departure Injection System Works



"Hypodermic" nozzle on grease gun is inserted through hole in bearing and penetrates seal. Lubricant injected, needle is withdrawn. Hole in seal closes itself and the bearing starts another long period of service without attention.

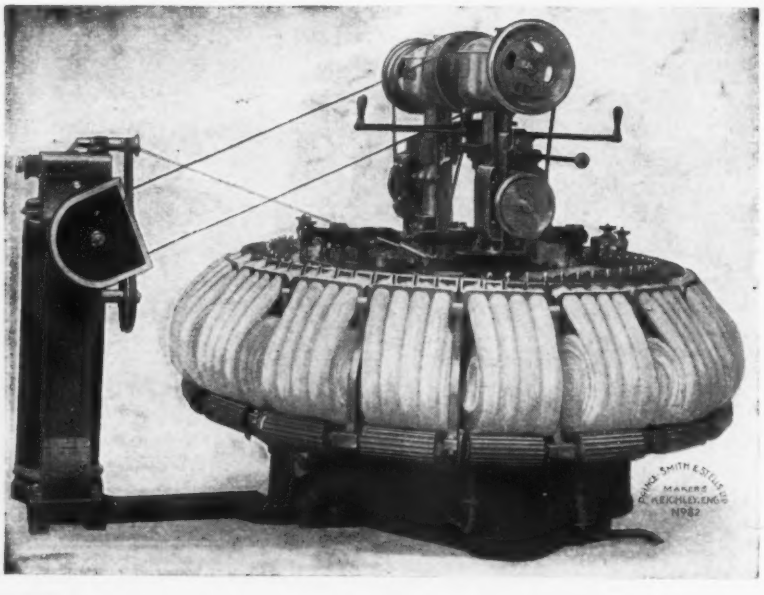
NEW DEPARTURE
BALL BEARINGS

3406

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN. • Branches in DETROIT • CHICAGO • LOS ANGELES and other principal cities

WE ARE MAKERS OF THE CONTINENTAL AND ENGLISH SYSTEMS OF COMBING, DRAWING, SPINNING & TWISTING

WORSTED



THIS UNIQUE POSITION MEANS WE CAN OFFER YOU OUR SERVICES NO MATTER WHICH SYSTEM YOU ARE INTERESTED IN.

Sole Agents U. S. A. & Canada
ATKINSON, HASERICK & CO.
211 Congress St. - Boston 6, Mass.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS

• KEIGHLEY (Yorkshire) ENGLAND •

Greatest V-Belt Show ON EARTH!

EVERY MEMBER OF ALLIS-CHALMERS GREAT NEW V-BELT TEAM IS SPECIALLY DESIGNED, TESTED AND BUILT TO LICK A SPECIFIC DRIVE PROBLEM, SAVE YOU MONEY AND TROUBLE

THIS ISN'T AN ACT. I CAN EAT UP 180°F TEMPERATURES ALL DAY LONG. IF THE HEAT'S ON YOUR DRIVES, CALL FOR HEAT-RESISTING SUPER-7
THEY CALL ME STATIC-RESISTING SUPER-7 BECAUSE I CARRY STATIC CHARGES TO MACHINES WHERE THEY'RE GROUNDED
DON'T WORRY IF YOUR BELTS MUST PRACTICALLY BATHE IN OIL OR GREASE. JUST ASK FOR SUPER-7 OIL-PROOF. I'M MADE OF IMPERVIOUS NEOPRENE.
OIL
A LITTLE OIL DOESN'T FAZE ME AT ALL. I'M OIL-RESISTING SUPER-7 ... HANDLING 90% OF ALL OILY DRIVE CONDITIONS.

Texrope V-belts are available nation-wide through Allis-Chalmers Dealers and Sales Offices. It pays to make Allis-Chalmers your V-belt drive headquarters.

ALLIS-CHALMERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

A 1961

BULLETIN!

SPEED RECONVERSION WITH HELP OF NEW FREE A-C KIT!

Guide to "How to Take Reconversion Inventory" of Drives, Motors, Pumps

Help in the big job of reconverting for peacetime production is now offered to plants everywhere by Allis-Chalmers Mfg. Co., its district offices and distributors. To all who request it, we're sending the new "Reconversion Inventory Kit", planned to speed the task of determining the condition of your existing equipment — V-belt drives, motors, and centrifugal pumps — which will be used in reconverted production.

SUGGESTS PROCEDURE, STATES STANDARDS

Used by foremen, maintenance men, and engineers, the Kit is a real time-saver... leads efficiently to probable trouble spots, helps clear them up. Gives bearing tolerances, resistance formulae, etc., in compact, easily-used form. Check List appraisal charts help determine present and future condition of units inventoried.

HOW TO GET YOUR KIT

For your free Reconversion Inventory Kit, call your nearest Allis-Chalmers distributor or district office, or write Dept. 108, ALLIS-CHALMERS MFG. CO. Milwaukee 1, Wis.

ALLIS-CHALMERS MFG. CO.
Dept. 108, Milwaukee 1, Wis.

Please send Reconversion Inventory Kit free of charge to:

Company.....

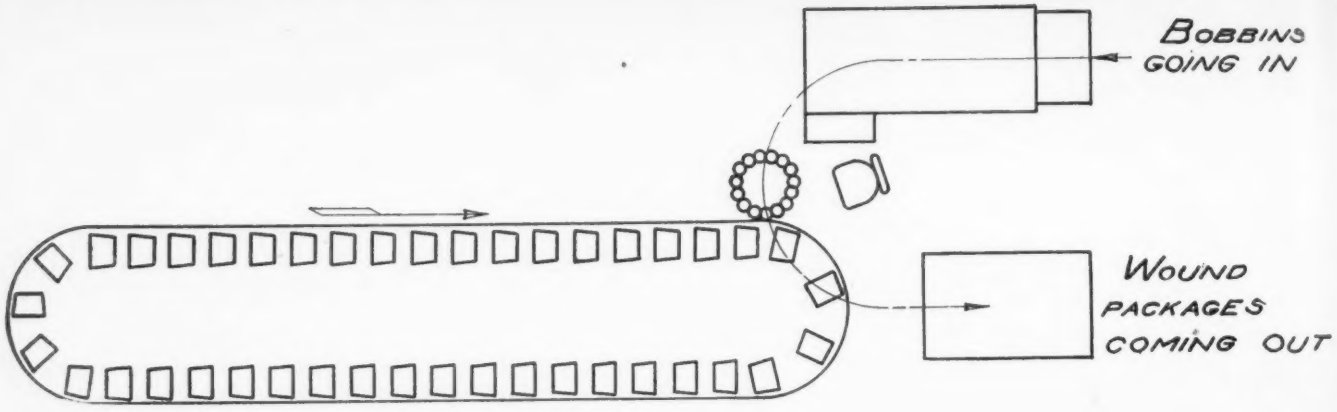
Address.....

.....

Attn. of Mr.....

HEAR THE BOSTON SYMPHONY: *Saturday, American Broadcasting Co.*

ABBOTT AUTOMATIC WINDER



The moving assembly line principle has always been the essential feature of Abbott winders and is not available in other makes.

The operator sits in one position, sets the full bobbins in a rotating magazine in front of her and doffs the full cones or cheeses at the same position.

There is no walking all day, stooping to pick up the bobbins, reaching over to tie them in, pushing trucks around the machine, etc. She works at the end of the winder out of the way of fly and dust. She does not have to strap a knotter to her hand and wiggle her thumb all day to tie knots.

As a result there is very little operator fatigue and yet the production in bobbins tied in per hour will average more than on any other equipment.

Any of the standard 6″ traverse packages can be wound—warping cones, knitting cones, wood or paper tubes.

The bobbins to be wound may be big or small, single or ply, warp, filling or combination wind, wood or paper.

Operators are quickly taught and maintain an even steady production.

The skill of winding is built into the machine.

ABBOTT MACHINE COMPANY

Main Office and Factory: Wilton, New Hampshire

Southern Representative: Mr. L. S. Ligon, Greenville, S. C.

SANDOZ PRESENTS *The color achievement of the month*

Serene Rose BY LORRAINE

From tea through theatre, the woman who wears this cleverly-styled wool crepe will face her social circle with the confidence that comes with knowing a dress is *right*.

Subtly reflecting the evening mood, this virgin-wool-and-worsted weave expresses Lorraine Manufacturing Company's fine talent for combining surface interest with subtle coloring.

In color . . . from the suave muted greys and browns that this season features to the glowing jewel-tones that compliment the individualist's sophistication . . . such top names as Lorraine are served by Sandoz.

Sandoz' policy of thinking ahead with textiles assures you of dyes that answer fashion's specific color demands and your own requirements for dependable quality and convenient handling. For example, Sandoz offers a full range of Acid colors . . . level dyeing, well suited for piece dyeing, and extremely fast to light and wear. These include Xylene Light Yellow 2GP (Pat.) . . . patented Alizarine Light Blue 4GL and Violet 2RC or Azo Rubinole 3GP (Pat.) . . . exclusive Sandoz developments.

For dyes . . . acid, chrome or direct . . . or auxiliary chemicals for both natural and synthetic fibres . . . call on Sandoz application laboratories located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where wide ranges of stocks are carried. Other branches in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDOZ *thinks ahead with textiles*

SANDOZ

IT MAKES WINDING EASY...AND SAVES PRESS-OFFS IN KNITTING

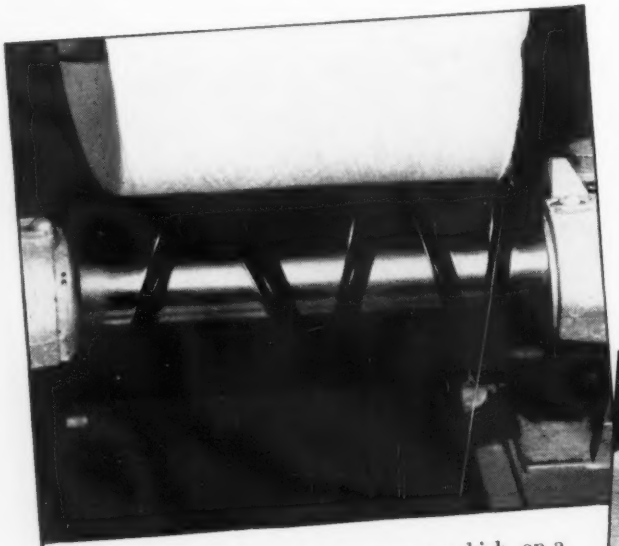
The Rotary Traverse, Universal's exclusive method of driving the winding package and traversing the yarn, is responsible for (A) the virtual elimination of winding machine maintenance and (B) a reduction of difficulties in producing knitted fabrics.

Mills operating Roto-Coners* obtain the dual advantage of lower-cost production and greater customer satisfaction.

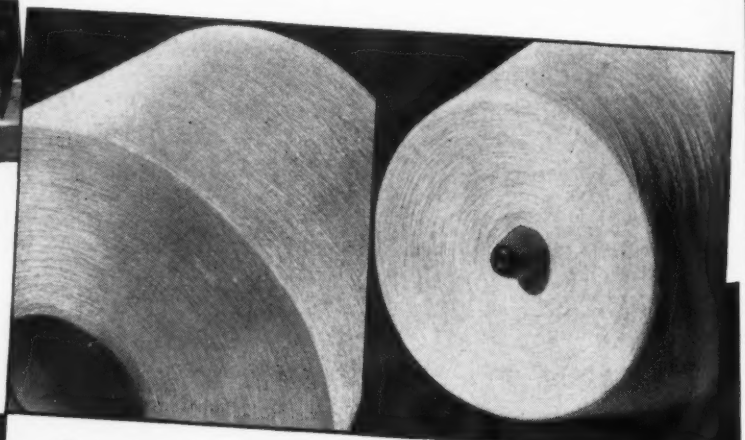
For knitting yarns, the Rotary Traverse has a "full-accelerated" groove arrangement; for tubes and dyeing packages, the groove crossings are evenly spaced. In either case, the groove arrangement is standard for all yarn sizes, giving the desirable *minimum* number of winds. Write for Bulletin 144, addressing Universal Winding Company, Providence, Boston, Utica, Philadelphia, Charlotte, or Atlanta.

*Reg. U. S. Pat. Off.

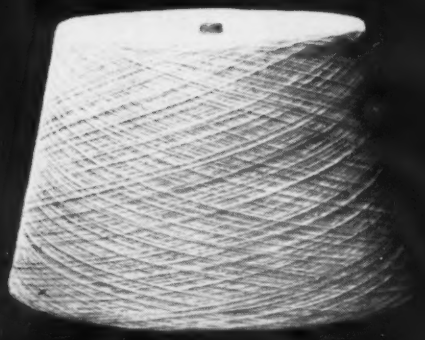
23-5-17



The Rotary Traverse replaces parts which, on a reciprocating-guide machine, wear fast and need frequent greasing, adjustment and replacement. The Rotary Traverse is standard for all conditions the machine will encounter . . . despite its high speed, it never needs greasing . . . and its life is virtually equal to the life of the machine. On the Roto-Coner*, maintenance runs about ½ of 1% on investment cost per year.



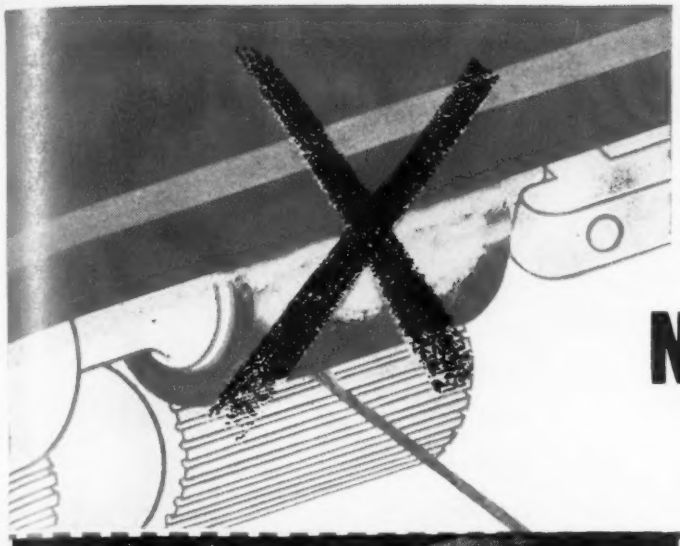
Inspection of Roto-Cones will show an absence of roll cuts near the nose end and freedom from underwinds or stitches at the base end. Since no slip drum is used, there is no chance of nipping the yarn between slip and driving drum. Since the yarn is reversed quickly at the ends of the traverse, there is no dwell, no chance for the yarn to build up and roll inward. Roto-Cones deliver freely without plucks or sloughing off.



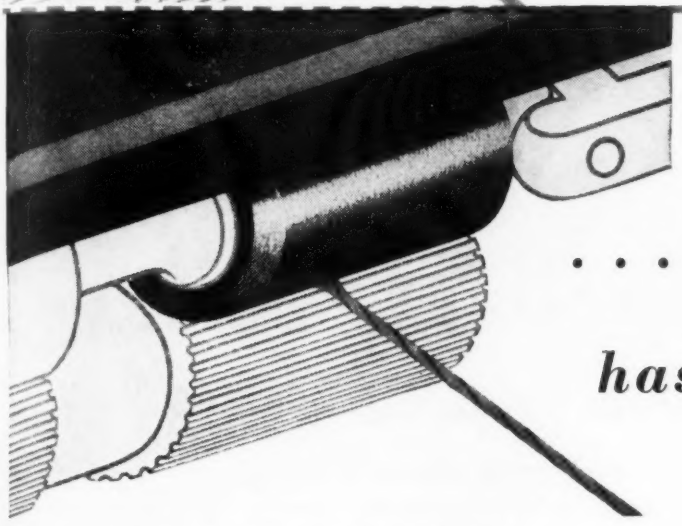
ROTO-CONER* LEESONA REG. U. S. PAT. OFF.

Open-Wind Cones for Knitting

WARPING CONES · DYEING PACKAGES · PARALLEL TUBES FOR TWISTING



NO EYEBROWING



. . . *because this cork cot has* EXTRA "GRIP"

Waste won't be nipped into the work when you run on Armstrong's Cork Cots. For not only does cork definitely reduce clearer waste, but also its extra "grip" carries waste well back onto the clearer boards—so *no eyebrowing occurs.* This means cleaner work . . . less clearer picking . . . fewer complaints from frame tenders.

Besides eliminating eyebrows, cork's high coefficient of friction results in more uniform drafting, stronger yarn, and reduced end breakage. But extra grip is only one of the reasons why Armstrong's Cork Cots give you better running work and more poundage. These cots "come back" quickly after passing top roll laps or hard ends. They have no hard or soft spots to grip the yarn unevenly. And because cork compresses evenly under roll weighting, Armstrong's Cork Cots maintain a true drafting surface.

In addition, these cots have a long initial life and can be rebuffed three or four times for extended service. Each rebuffing costs as little as one-half cent per roll.

Because they offer these vital operating advantages, Armstrong's Cork Cots are now serving more spindles than any other roll covering material. For the full story of how these cots can help you maintain peak production, see your Armstrong representative. Or write Armstrong Cork Company, Textile Products Department, 8312 Arch St., Lancaster, Pennsylvania.

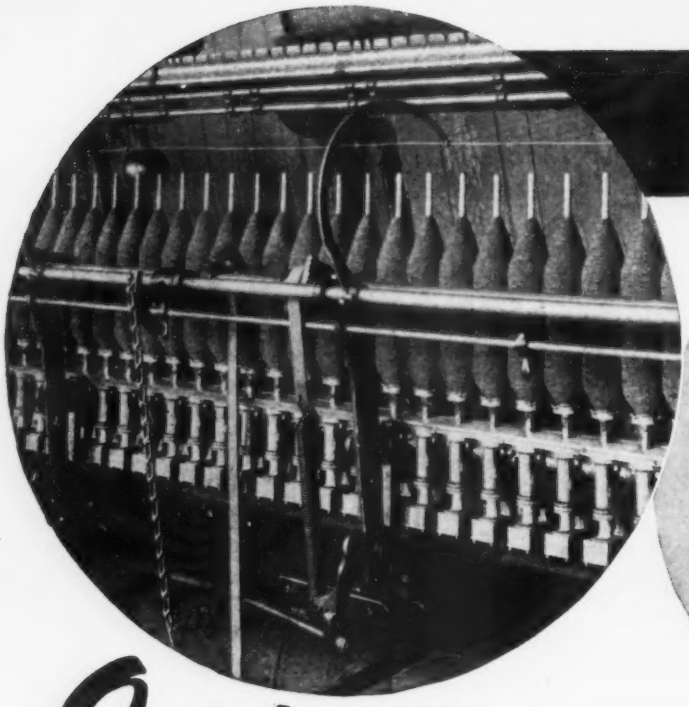
Reg. U. S. Pat. Off.

BETTER RUNNING WORK

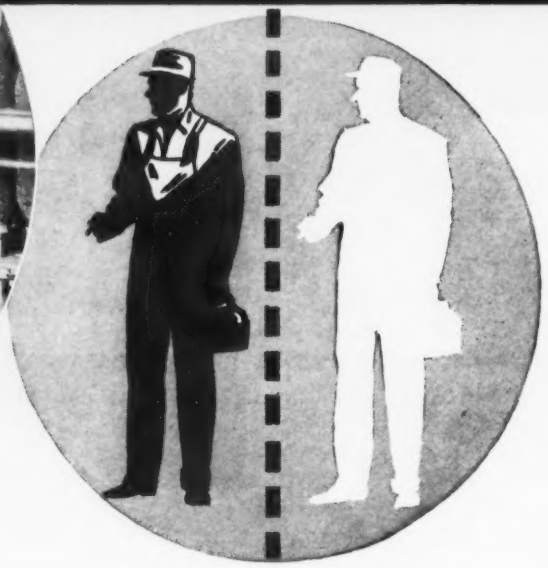
— MORE POUNDAGE

ARMSTRONG'S CORK COTS

ACCOTEX COTS* • ACCOTEX APRONS*



J & B MULES



On Labor Alone They Save Up to 50%

As Compared with Ring Spinning Frames

The figures herewith were given to us by well known mills using both J & B Mules and ring spinning frames. They speak for themselves.

SIZE OF YARN (10 turns)	POUNDS IN 8 HOURS		LABOR COST PER LB.		SAVING
	R. S. FRAME 120 sp. per op.	G. P. MULE 336 sp. per op.	R. S. FRAME @ 60¢ per hr.	G. P. MULE @ 70¢ per hr.	BY G. P. MULE
1 Run	386	813	.012	.007	41%
2 Run	193	406	.025	.014	44%
3 Run	128	270	.038	.021	45%
4 Run	96	203	.050	.028	44%
5 Run	77	162	.062	.035	43%

Such savings are not confined to the GIANT Package Mule alone. Another mill reports that one standard package J & B Mule, 384 spindles, 2¼" gauge, shows a saving in labor cost of 51% over 4 ring spinning frames, 96 spindles each.

OTHER ADVANTAGES OF J & B MULES OVER RING SPINNING FRAMES

1. Up to 91% saving in H. P. per equal number of spindles.
2. Up to 50% saving in floor space per equal number of spindles.
3. Up to 75% saving in investment per comparable capacity.
4. The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%.
5. **The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning.**
6. It permits inspection of the thread.
7. It will successfully spin short staple roving which will not hold together on a frame.
8. Spindle for spindle, it will produce as much yarn as a frame, due to a practical operating speed and negligible breakage.
9. Its cost of upkeep is exceptionally low.
10. The J & B filling package does not require rewinding for an automatic loom.
11. Changes for spinning different types of yarn on the J & B Mule are easily and quickly made.
12. Mule bobbins cost less than frame bobbins.

Let us recommend an installation of J & B Mules for your wool spinning requirements.

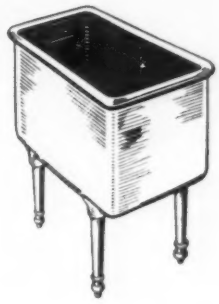
JOHNSON & BASSETT, INC.

WORCESTER, MASSACHUSETTS, U. S. A.

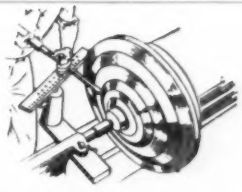
Want a Tip?

on selecting your most practical Stainless Sheet finish

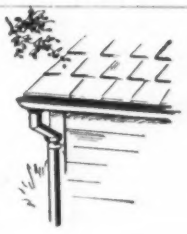
WHITE, PICKLED—No. 1 —for deep draws. Tanks, bins for chemicals—the dough trough shown at the right —heavy duty industrial equipment—applications in which stainless works with its sleeves rolled up.



DULL, SMOOTH—No. 2D —for forming, drawing, dishing —*and spinning.* Mild cold finishing has rendered the surface smooth and dense. Tools ride easily over the surface. Stainless shapes itself to your product—and your needs.

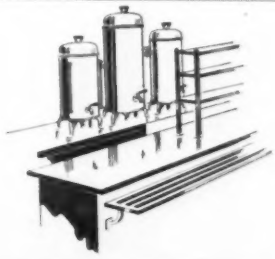


BRIGHT, DIFFUSELY REFLECTIVE—No. 2B —for formed products where "look" is a factor. Painstakingly rolled and inspected for perfect uniformity of surface, 2B calls attention to itself. And where special sheens and lusters are required, 2B can be brushed or polished after fabrication.



POLISHED, SATIN, REFLECTIVE—No. 4 —one of the most dramatic of stainless finishes—and the easiest to keep clean. The finish for food service equipment, decorative trim, dairy equipment — wherever it pays to boast, "This is stainless."

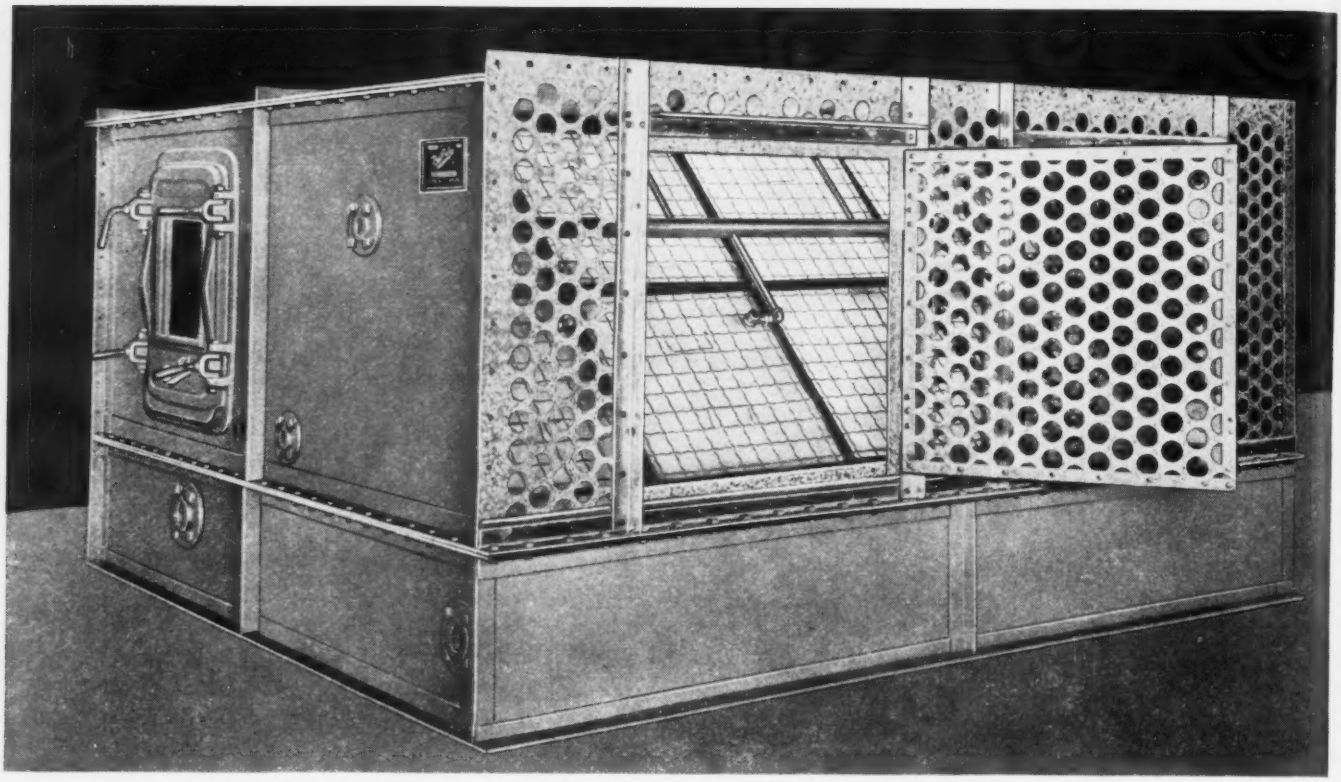
JML Co B-M1



EASTERN STAINLESS STEEL CORPORATION

BALTIMORE 3, MARYLAND • Distributors' stock available in most areas

CHICAGO • CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • PHILADELPHIA



Process your Air *for Maximum Efficiency*

Many chemical and food plants, textile mills and similar establishments are enjoying the benefits of "processed air" with Buffalo Wet Glass Cell Air Washers.

This compact, relatively low-priced air conditioning equipment gives excellent results in air-cleaning, humidifying, dehumidifying, heating and cooling. It is easily installed, inexpensive to operate and maintain and practically fool-proof in construction.

Air processed through it provides better working conditions for employees, uniform temperature and humidity for the product and freedom from dust.

Ask for Bulletin 3457 which gives full details.

BUFFALO FORGE COMPANY

184 Mortimer St. **Buffalo, N. Y.**

Canadian Blower & Forge Co., Ltd. **Kitchener, Ont.**

"Buffalo"

WET GLASS CELL AIR WASHERS

NEW!

A Complete, Portable Lubrication Department on Wheels Equipped with New Electric High Pressure Pump

Now a powergun model has been added to the popular line of Alemite Lubrikarts.

High pressure lubrication is made available by simply plugging in the electric cord. The high pressure hose and electric cord are mounted on automatic spring return reels which permit freedom of operation twenty feet in any direction.

The unit is also equipped with hand operated equipment for servicing hydraulic systems, oil reservoirs, gear housings, and for filling oil cans.

It saves time because of less frequent returns to the oil storage room by the oiler. It provides greater assurance that lubrication will not be neglected because of lack of proper lubricants or equipment at the point of use. Pushed like a perambulator, it is designed for one-man operation and is able to travel between rows of machines or anywhere in a plant where space is limited.

21" wide, 55¼" long, 39" high. Mounted on five-inch Bassick ball bearing casters.

IDEAL FOR

High Pressure Lubrication, filling hydraulic systems, servicing oil reservoirs, lubricating gear housings, refilling oil cans, refilling grease guns.

FULLY EQUIPPED

Electric High Pressure pump, hose reel, hose and hydraulic coupler; gear lube and oil containers; compartments for oil cans; space for fittings, tools, waste, etc.

WRITE

for complete information to Alemite, 1888 Diversey Parkway, Chicago 14, Illinois. In Canada: Belleville, Ontario.

Ask Anyone *In Industry!*

Another Product of STEWART WARNER

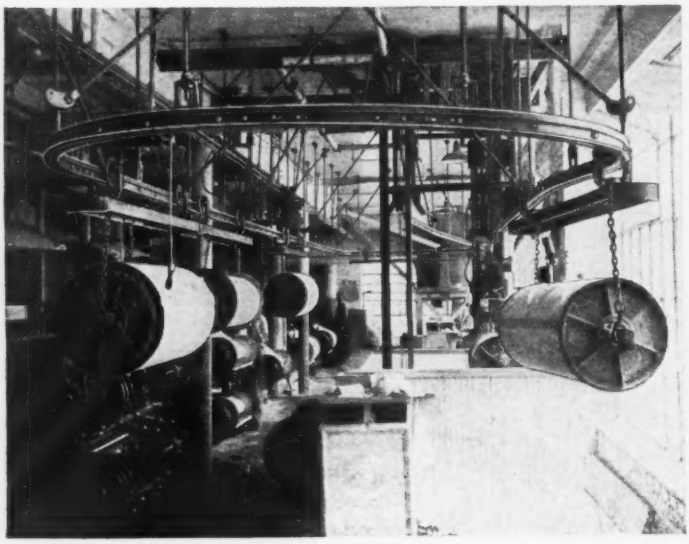
ALEMITE REG. U.S. PAT. OFF. *First in Modern Lubrication*

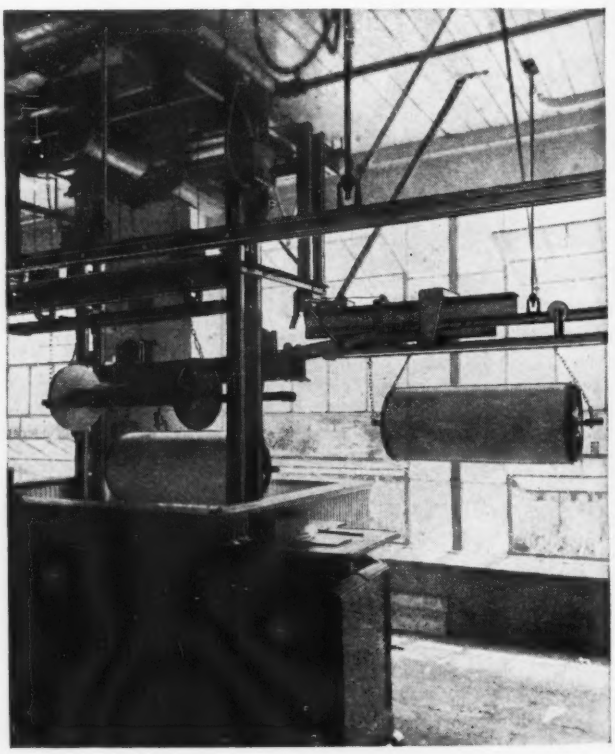
EQUIPMENT • LUBRICANTS • LUBRICATING SYSTEMS • ENGINEERING • MAINTENANCE

American MonoRail Engineers, with their highly specialized experience, can relieve you of all details in cranes and overhead handling systems. They are constantly in touch with handling problems of every conceivable kind. At the beginning of the project their assistance in preparing an accurate and efficient layout will insure successful operation of the system.

Let us send you a copy of our 264-page engineering manual covering Mono-Rail Carriers and Cranes.

These engineers are conveniently located in nearly every industrial center for immediate consultation. This service is gladly offered without obligation.



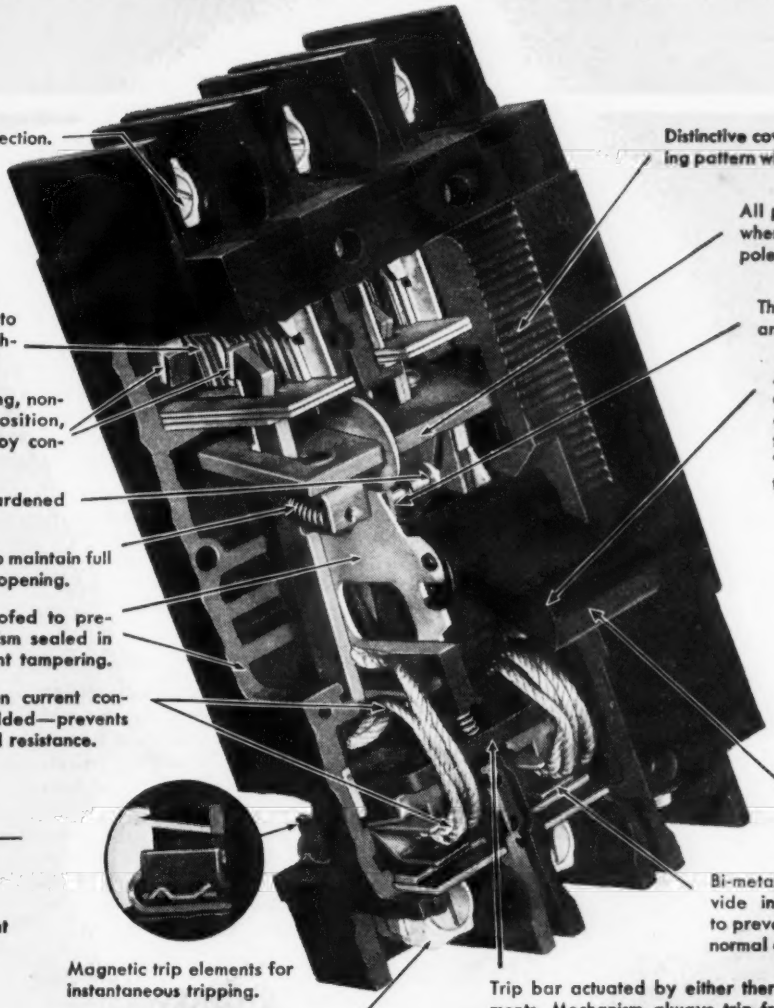


THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE CLEVELAND 7, OHIO

A New and Improved
100-AMPERE FRAME CIRCUIT BREAKER

Type ML2 • **15 to 100 Amperes, 600 Volts AC—50 to 100 Amperes, 250 Volts AC-DC**



Designed for front connection.

Distinctive cover design provides pleasing pattern when breakers are grouped.

All poles trip simultaneously when overload occurs on any pole.

The mechanism is quick-make and quick-break.

Automatic tripping is clearly indicated; handle assumes intermediate position between "ON" and "OFF" when breaker is tripped by overload.

Arc chambers designed to provide effective, high-speed interruption.

Contacts are non-welding, non-oxidizing silver composition, mounted on copper alloy contact arm and terminal.

Bearing surfaces are hardened to reduce wear.

Springs cause contacts to maintain full pressure until instant of opening.

All steel parts rust-proofed to prevent corrosion; mechanism sealed in bakelite case to prevent tampering.

All connections between current connecting parts are welded—prevents loosening and increased resistance.

Breaker Unit
Dimensions
9 9/16" long
4 15/32" wide
3 3/4" high
4 7/8" maximum height including handle

Strong bakelite handle moves in sealed grooves.

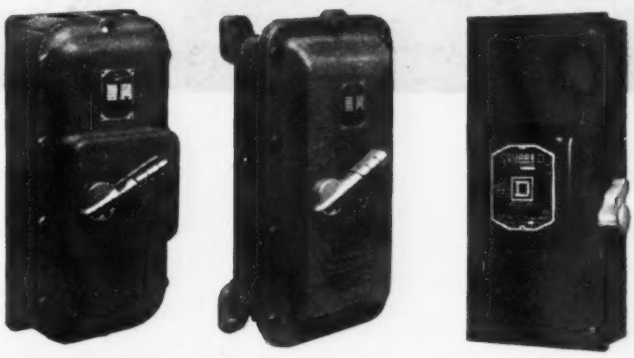
Bi-metal overcurrent elements provide inverse time characteristic to prevent tripping on momentary normal overloads.

Magnetic trip elements for instantaneous tripping.

Trip bar actuated by either thermal or magnetic trip elements. Mechanism always trip-free, so contact cannot be held closed against short circuits or abnormal overloads.

Solder-Solderless connectors furnished on ratings of 35 to 100 amperes. Screw and eared washer 15-20-25 amperes.

• The new ML2 is furnished in distribution panelboards, as well as the three types of enclosures shown at right. Write for ML2 Bulletin, which gives complete details.



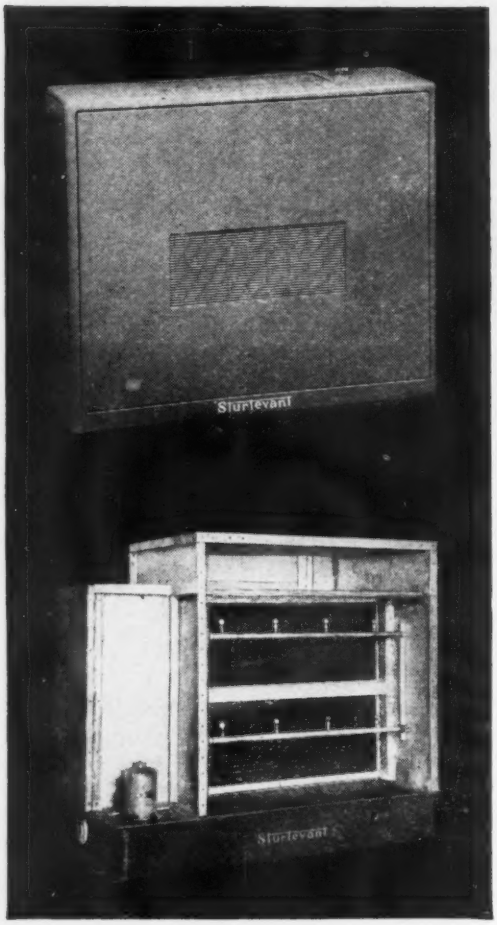
Weather-Proof and Dust-Tight | Explosion Resisting | Dust Resisting

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

Here's your EXTENDED SURFACE —that users spell "SERVICE"

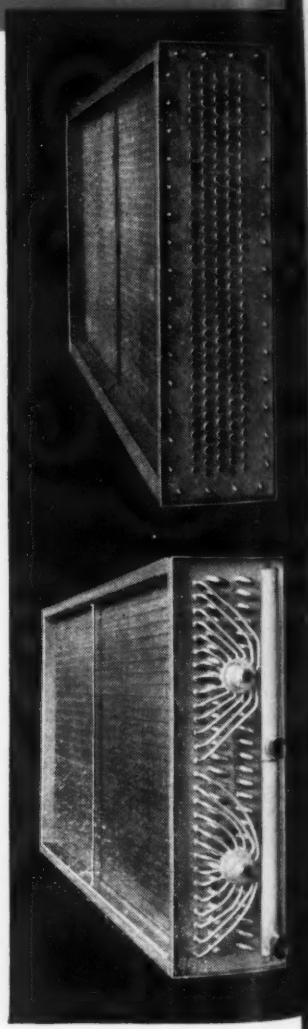
STURTEVANT HEAVY DUTY EXTENDED SURFACE HEATER is the culmination of over 75 years of experience in manufacturing blast heaters and analyzing the performance of all types of heaters. To the basic rugged construction of earlier pipe-coil heaters has been added an ingenious arrangement of tapered spiral fins. The result is high heat transfer per square foot of face area. Weight is but a fraction of pipe coil heaters. In addition there is uniform steam circulation and excellent non-freeze characteristics. Due to their rugged construction, outstanding performance and freedom from maintenance and repair, Sturtevant Heavy Duty Heaters are particularly suited to industrial heating, ventilating, air-conditioning, vapor absorption and drying applications, especially where higher steam pressures are encountered.



← STURTEVANT AIR BLENDERS are simple, compact units for mixing and heating conditioned air. As the name implies, they mix cold dehumidified air, or heated humidified air from a central system, with predetermined quantities of re-circulated room air, to maintain desired room temperatures both summer and winter. Operates on the ejector nozzle principle, without moving parts, under set thermostatic control. Equipped with a booster radiator coil for winter operation. Designed for free standing, or may be located in recesses under windows or behind ornamental paneling.

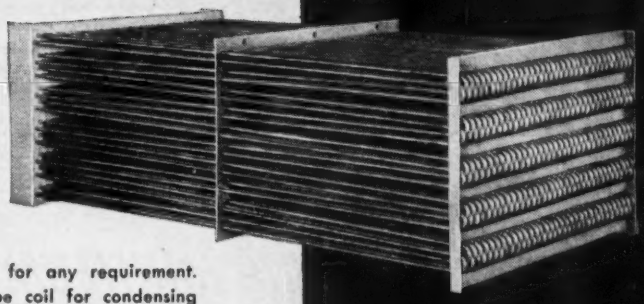
STURTEVANT COOLING COILS → are rugged, efficient extended surface coils of seamless copper tubes firmly expanded into plate type fins giving a permanent bond that assures unrestricted heat flow from primary to secondary surfaces. For use with water or refrigerants. Two types for chilled water:— (1) with tubes individually assembled into headers to permit cleaning of tubes (2) with continuous tubing. Used for vertical or horizontal air flow. Direct expansion coils are provided with distributing headers giving equal refrigerant distribution to all circuits.

← STURTEVANT SURFACE DEHUMIDIFIERS are wet surface units, designed around Sturtevant Extended Surface Coils, for accurately controlling wet and dry bulb conditions in industrial and comfort air conditioning. Available for chilled water or directly expanded refrigerant. Spray water is directed against the coils on the air-entering side and is carried through the coils so as to wet the entire surface. This keeps the coils clean and results in practically saturated air leaving the Surface Dehumidifier.

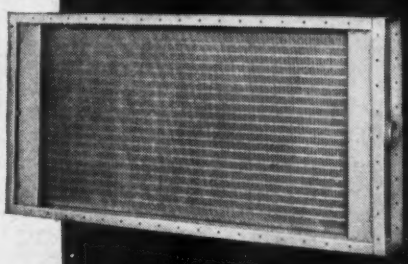


STURTEVANT PIONEERS AND LEADS

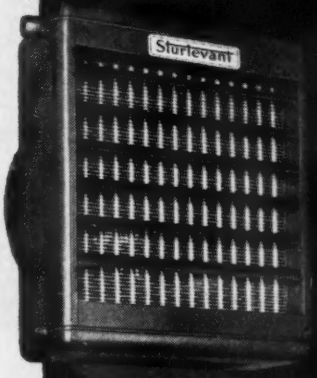
in the manufacture of extended surface heating and cooling apparatus. Both in the number of types available for different kinds of service, and the various sizes in which these types are made, there is a variety of equipment to assure a "tailor-made" fit for any requirement. Shown above is an evaporative type coil for condensing refrigerant or cooling water.



STURTEVANT PLATE FIN HEATER has earned, for many years, a reputation for long efficient service in air-conditioning, industrial and unit applications. Aluminum fins of continuous plate type allow free and uniform air flow. Tubes of seamless copper expanded into fins assure a permanent mechanical bond and unrestricted heat flow from tube to fin. Different performances are obtained by varying the fin depth in the direction of air flow. Wide variety of sizes for applications ranging from large industrial installations to small domestic units.



STURTEVANT TEXTILE MILL HEATERS are particularly suited to heating textile mills. Low operating cost, elimination of spotty humidification by accelerated recirculation of air, and low installation cost are among the advantages. These unit heaters are adaptable to new mills and also for revamping old heating systems. Installed directly behind the atomizing heads, they entrain atomized moisture and distribute it evenly throughout the room, thus helping to maintain uniform humidity. Fins are widely spaced to facilitate cleaning, and there is a clean-out door in the bottom of the casing. Lint which may collect on the heating surface can be blown free by compressed air from the outlet side. Available in sizes to meet all requirements.



HEATING

DRYING

VAPOR ABSORPTION

AIR CONDITIONING

VENTILATING

COOLING

PROCESSING

EXCEPTIONAL SERVICE is the outstanding characteristic of Sturtevant Extended Surface Equipment. No wonder, when it is the product of experience—comprised of "know how" that goes back more than 75 years to the first hot blast apparatus, (U.S. Patent No. 92,490, granted to B. F. Sturtevant July 13, 1869). Whatever your problem of heating, cooling, ventilating or air-conditioning may be, there is a Sturtevant unit to exactly fit your requirements.

With Sturtevant, there's no necessity for sacrificing one desirable advantage to gain another. Your Sturtevant Engineer can help you get them all, because he is practically unlimited in his choice of tools for licking your most complex problem. As you scrutinize your operations, with an eye to what lies immediately ahead, why not plan to talk with a Sturtevant Engineer about what Extended Surface Equipment can do for you.

B. F. STURTEVANT COMPANY

Division of Westinghouse Electric

Hyde Park Boston 36, Mass

Sturtevant

REG. U. S. PAT. OFF.

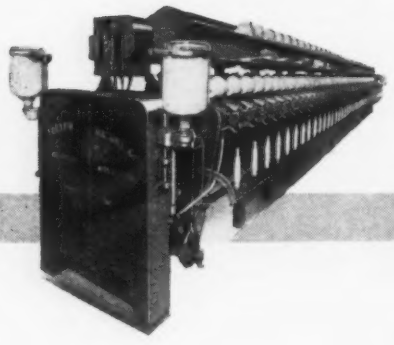
Puts Air to Work

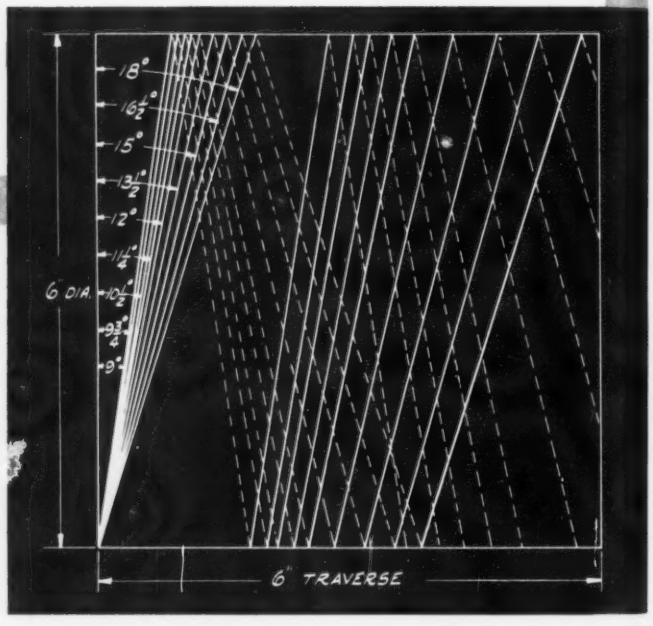
FOSTER MODEL 102

FOR WORSTED YARNS

FINEST SOFT TWIST YARNS WOUND WITH MINIMUM BREAKAGE

MINIMUM TENSION IS THE REASON





Angles of wind obtainable on Foster Model 102.

Because the Model 102 is a cam winder with thread traverse guide, all tension can be removed, without losing control of the yarn, if desired, when winding soft twist knitting yarns. This means MINIMUM BREAKAGE.

The angle of wind required to produce a non-bulging cone with your yarns can be provided. The range is from 9° to 18°.

Upkeep on this machine is also low. Hardened metal thread guides and tension devices have great resistance to cutting, even by hard twist worsted yarns. Repair costs run as low as $3.50 per year per 100 spindles.

OTHER OPERATING ECONOMIES include: 7" traverse cone, if desired • self threading slub catching attachments • easy doffing of empty bobbins (double conveyor is BELOW bobbin pins) • no rehandling of empty bobbins (conveyor empties into standard sized truck) • high winding speed, giving twice the production at 2/3 the cost, as compared with older models.

And don't forget Foster Model 102 FLEXIBILITY, which will be explained on request.

Empty bobbin conveyer discharging into standard sized truck.

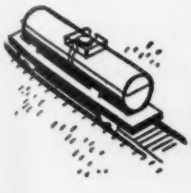
FOSTER MACHINE CO., Westfield, Mass., U.S.A.

SOUTHERN OFFICE Johnston Building Charlotte, North Carolina • Canadian Representative: Ross Whitehead & Company Limited University Tower Building 660 Ste. Catherine Street West Montreal, Quebec

COLUMBIA CUSTOMERS WERE FIRST TO PROFIT

Through the years, Columbia has effected numerous improvements in the manufacture, distribution and handling of alkalies. Important new products have been introduced—in 1945 alone, for example, these included Butadiene Monoxide, Diglycol Chloroformate, Butyl Diglycol Carbonate, Butoxyethyl Diglycol Carbonate and Phenyl Diglycol Carbonate.

Although some Columbia developments are now widely used throughout the industry, Columbia customers were *first to benefit*—through better performance of chemicals in their processes . . . through substantial savings in their operating costs . . . through production of better finished goods.



USERS OF COLUMBIA CAUSTIC SODA

through improved tank cars—were first to receive 73% Caustic Liquor without danger of metallic contamination . . . to be relieved of the necessity of steaming cars under all but extraordinary conditions . . . first to benefit through using Columbia unloading and handling procedures . . . first to obtain high grade diaphragm electrolytic Caustic, purified by a patented Columbia process.

NEW COLUMBIA BARGES

designed specifically to transport Liquid Caustic Soda and Liquid Chlorine—were first to bring important advantages to customers with plants located strategically in relation to inland waterways.

GLASS MANUFACTURERS

were first to obtain Soda Ash in controlled particle sizes matching those of the sand—providing a more uniform mix and more dependable results in glass products.

USERS OF PIGMENTS

have found those unique Columbia pigments, Calcene T and Silene EF, to be of immeasurable value, particularly in obtaining desirable qualities in both synthetic and natural rubber stocks.

These few examples are indicative of the results of a progressive policy . . . a policy which will continue to bring Columbia customers the advantages of many more "firsts."

COLUMBIA CHEMICALS

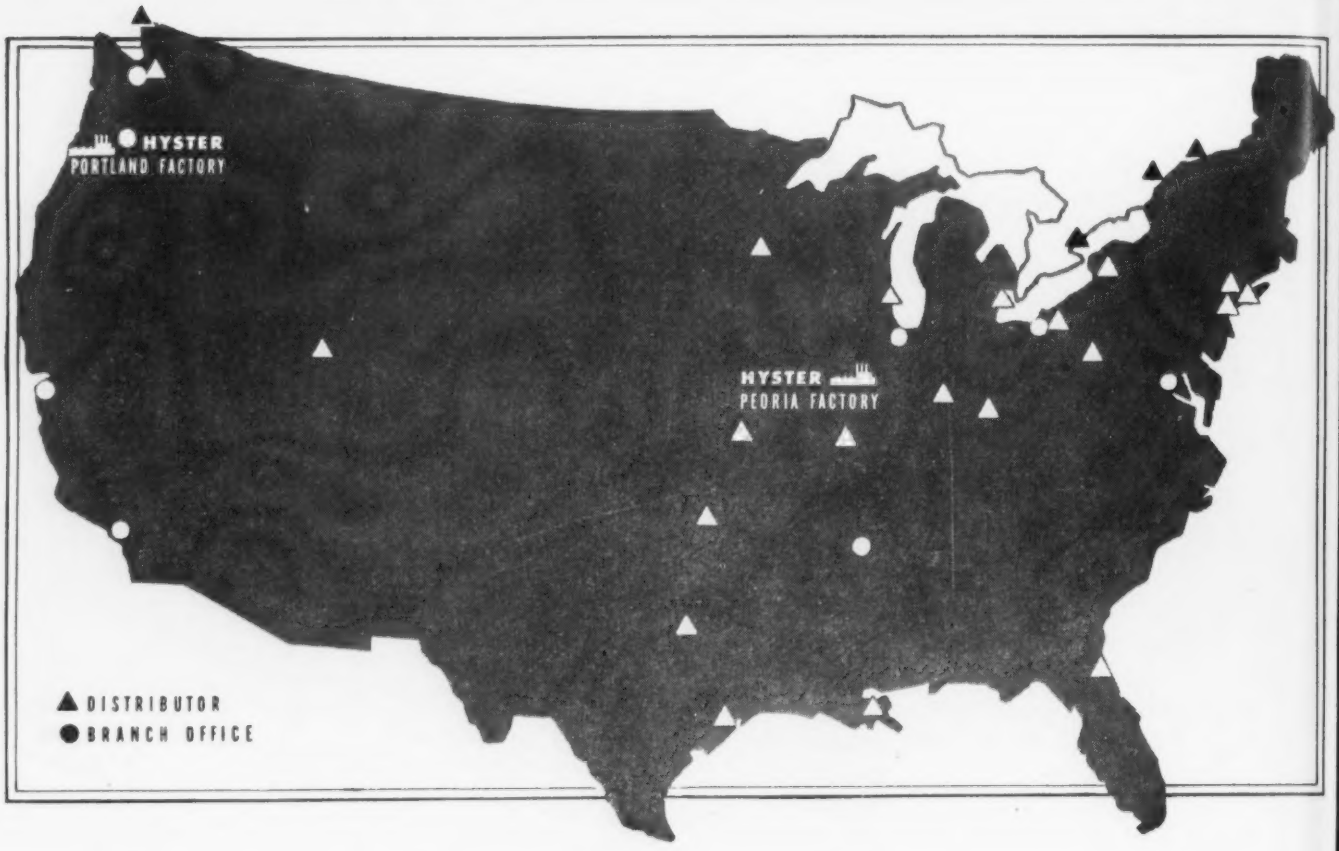
PITTSBURGH PLATE GLASS COMPANY • COLUMBIA CHEMICAL DIVISION

GRANT BUILDING, PITTSBURGH 19, PENNSYLVANIA

Chicago • Boston • St. Louis • Pittsburgh • New York • Cincinnati • Cleveland • Philadelphia • Minneapolis • Charlotte • San Francisco

COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS

Soda Ash • Caustic Soda • Sodium Bicarbonate • Liquid Chlorine • Silene EF (Hydrated Calcium Silicate) • Calcium Chloride • Soda Briquettes
Modified Sodas • Caustic Ash • Phosflake • Calcene T (Precipitated Calcium Carbonate) • Pittchlor



HYSTER

LIFT TRUCK SERVICE COVERS THE COUNTRY

33 HYSTER DISTRIBUTORS AND FACTORY BRANCH OFFICES GIVE HYSTER OWNERS COAST-TO-COAST SERVICE...

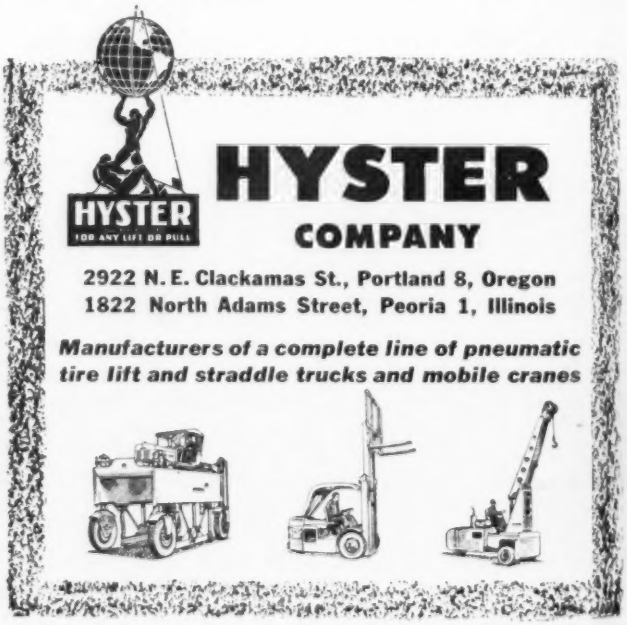
HYSTER owners throughout industry have rapid service on genuine Hyster parts and on mechanical maintenance.

Nation-wide parts and mechanical service is available through 2 Hyster factories, 8 Hyster branch offices and 23 Hyster distributors—a total of 33 centers.

This network of Hyster service facilities provides two important features:

1. **Strategically located supplies of genuine Hyster parts.**
2. **Factory-trained mechanics ready to render special service.**

Hyster lift trucks get around-the-clock use, meet both production and utility demands. When either parts replacements or service attention is required, both are quickly available. *Hyster's Service Department, like Hyster's Sales Department, covers the country.*


HYSTER
FOR ANY LIFT OR PULL
HYSTER
COMPANY
2922 N. E. Clackamas St., Portland 8, Oregon
1822 North Adams Street, Peoria 1, Illinois
Manufacturers of a complete line of pneumatic tire lift and straddle trucks and mobile cranes

LOWEST COST PER LOOM HOUR OF OPERATION

Because

DAYTON REVERSIBLE DROP-BOX PICKERS HAVE: THREE POINT DENSITY CONTROL

POINT ONE ★ It's HARD here!
Composition bearing inside spindle hole prevents wear—requires no lubrication.

POINT TWO ★ It's SOFT here!
Cushions terrific impact of picker stick.

POINT THREE ★ It's SOFTER here!
Prevents shuttle point loosening.

Dayton Reversible Drop-Box Pickers lower costs per loom hour of operation because they are *engineered* to stand up under the terrific impact of the shuttle. Their improved type of construction makes possible longer life and a higher degree of efficiency than has ever been known before. That's why Dayton Reversible Drop-Box Pickers will help you to lower production costs.

You will find this same engineered construction in all Dayton Textile Mill products. It is engineering "know-how" that is the result of years of research experience in natural and synthetic rubber products. Put this experience to work in your mills reducing costs, increasing efficiencies. Write for complete information today.

THE DAYTON RUBBER MANUFACTURING COMPANY
Dayton 1, Ohio — Waynesville, N. C.
Main Sales Office: Woodside Building, Greenville, S. C.

DAYTON DE LUXE LOOP PICKERS
Are approximately twice as strong as other types...and easier to install. They reduce shuttle costs, keep their shape, and "stay put" on the stick. They have been proved by years of actual mill service.

Pickers by
Dayton Rubber
THE MARK OF TECHNICAL EXCELLENCE IN SYNTHETIC RUBBER

FAMOUS SYNTHETIC RUBBER PRODUCTS SINCE 1934

... that's *Tufferized* Card Clothing

Yes, a bulldog *is* tough—and a friendly, willowy cat *is* flexible—but Tufferized Card Clothing, made from the finest steel wire, is especially tempered for *both toughness and flexibility!*

And because it is so evenly and so accurately placed in the famous Tuffer foundation, it is easier to strip . . . stays on the job with fewer grindings! It all adds up to greater production and lower carding costs!

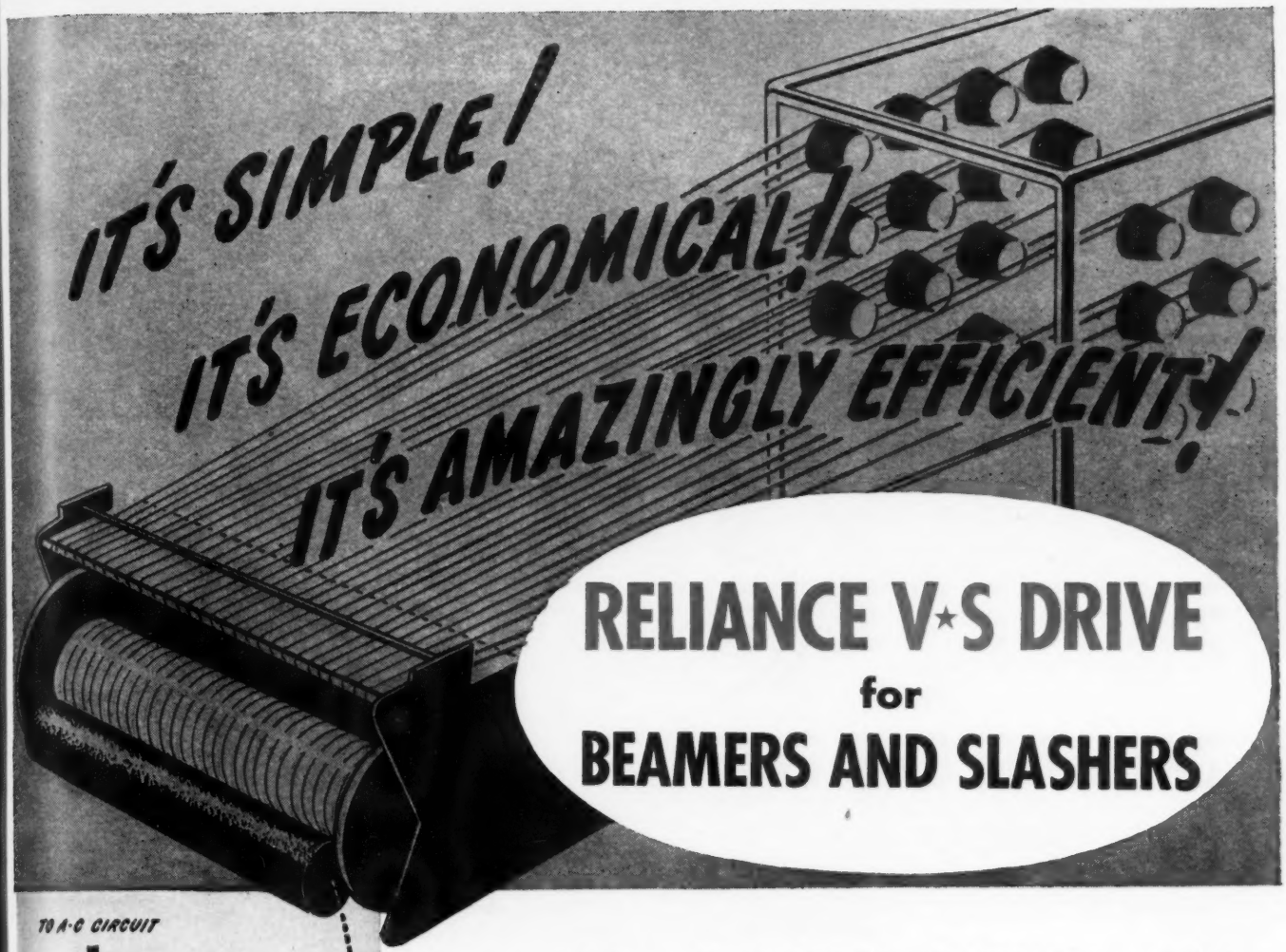
Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

TUFFER CARD CLOTHING

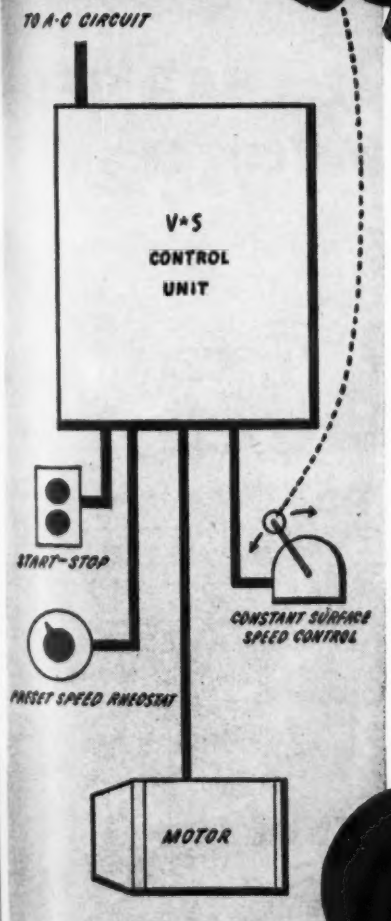
HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Austin **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2



RELIANCE V★S DRIVE
for
BEAMERS AND SLASHERS



Beamers and slashers equipped with Reliance V★S Drive have conclusively proved their advantages in many textile mill installations. Aside from its simplicity and its economy, both in relatively low first cost and maintenance, V★S Drive effectively meets the difficult requirements of handling delicate yarns with minimum breakage and consistently high quality of output.

- ★ A predetermined surface or linear speed is constantly and automatically maintained as beam diameter increases.
- ★ Stalled tension is provided to prevent slack in warps when stopped.
- ★ Full horsepower is available throughout range of beam diameter without overloading electrical equipment.
- ★ The V★S Drive operates from plant A-c. circuits, and occupies a minimum of valuable floor space (frequently is built into the machine).
- ★ All component parts are types of equipment with which maintenance men are familiar.

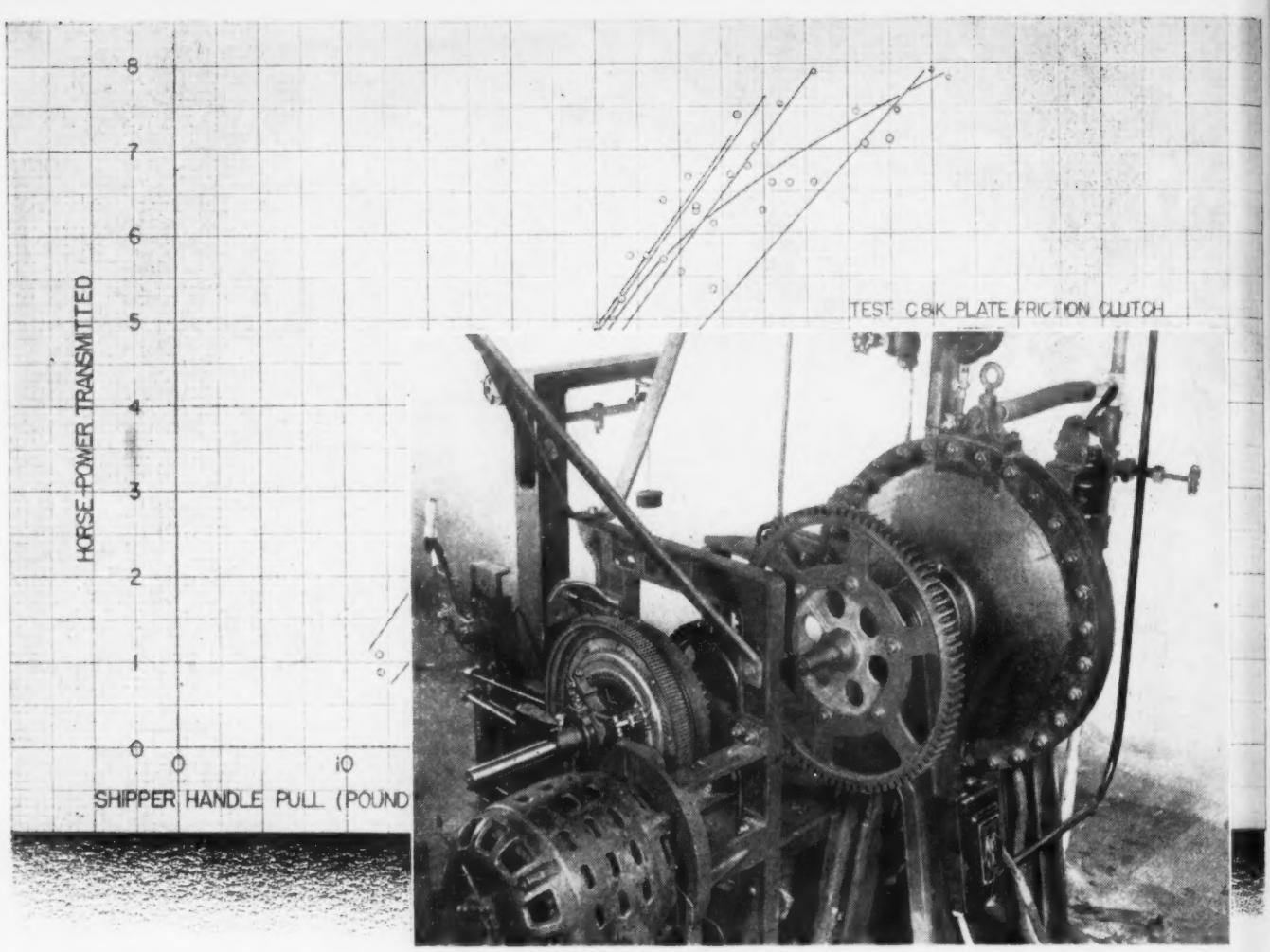
Write or phone the nearest Reliance office for full information on V★S Drive-equipped beamers and slashers and their performance records in exacting textile mill operations.

RELIANCE ELECTRIC & ENGINEERING CO.
1086 IVANHOE ROAD • CLEVELAND 10, OHIO

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Denver • Detroit • Gary • Greenville • Houston
Kalamazoo • Kansas City • Knoxville • Los Angeles • Milwaukee • Minneapolis • New Orleans
New York • Philadelphia • Pittsburgh • Portland, Ore. • Rockford, Ill. • St. Louis • San Francisco • Seattle
Syracuse • Tampa • Washington, D. C.

RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

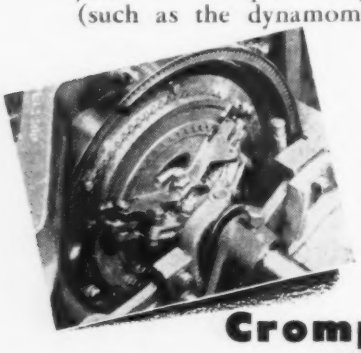


WHAT C & K ENGINEERS HAVE LEARNED

from Operational Tests on LOOM-CLUTCHES

This is another of the many continuing studies in C&K's engineering laboratories. *Objective:* To develop a loom-clutch that (1) requires a minimum of physical effort on the part of the operator; (2) will carry instantaneous peak loads without undue slippage and wear; (3) will require the least adjustment and replacement of parts.

So C&K engineers have developed a new type of plate clutch which more than meets these objectives . . . as proven by actual operating tests (such as the dynamometer test set-up shown above). The findings:



At left: New C&K Plate Friction Clutch as actually installed on a C&K Loom in daily operation on the testing floor.

(1) Shipper-handle can be operated with the little finger . . . because of the ease with which the 6 geared friction segments engage and disengage. The clutch mechanism is so designed that the slight shipper-handle pull is magnified to a level that is sufficient to carry loads far in excess of those required. This means quick, positive operation, and a smoother-running loom.

(2) Clutch carries instantaneous loads with far less slippage than before, and with far less wear which, over a period of months, can still be measured in no more than thousandths of an inch.

(3) The new clutch operates months longer without adjustment. Banging-off and parts breakage are thereby minimized, loom-fixing cut.

These are known, accomplished facts. So it can be known, *now,* that the new models of C&K looms to be equipped with this new clutch will be easier to operate . . . will operate more continuously . . . and will require less maintenance . . . than any looms yet built.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co.
Pawtucket, R. I.

between Today's Knowledge. and Tomorrow's Looms

COLOR
...the Master Salesman
From the cradle to the grave – for useful and for artistic purposes – COLOR plays an indispensable part in our lives. To use color in textile products, is to employ THE MASTER SALESMAN, for color sells without the use of words.
To employ color most successfully in yarn dyed fabrics use Franklin Process Service. With 35 years of experience and with 4 yarn dyeing plants, this organization can help designers in selecting colors, can assist mills in obtaining yarns, and in running them with maximum profit.
Whether 1 plant or all 4 plants work for you, color quality will be the same, for all plants use the same formulas and equipment for standard shades.
Franklin Process
LARGEST PACKAGE DYERS IN THE WORLD
New York Representative, 40 Worth St.;
Chicago Representative, 100 W. Monroe St.
VIDENCE
PHILADELPHIA
GREENVILLE
CHATTANOOGA

LONG DRAFT SPINNING *Simplified*

. . . WITH THIS NEW PATENTED WEIGHTING ASSEMBLY

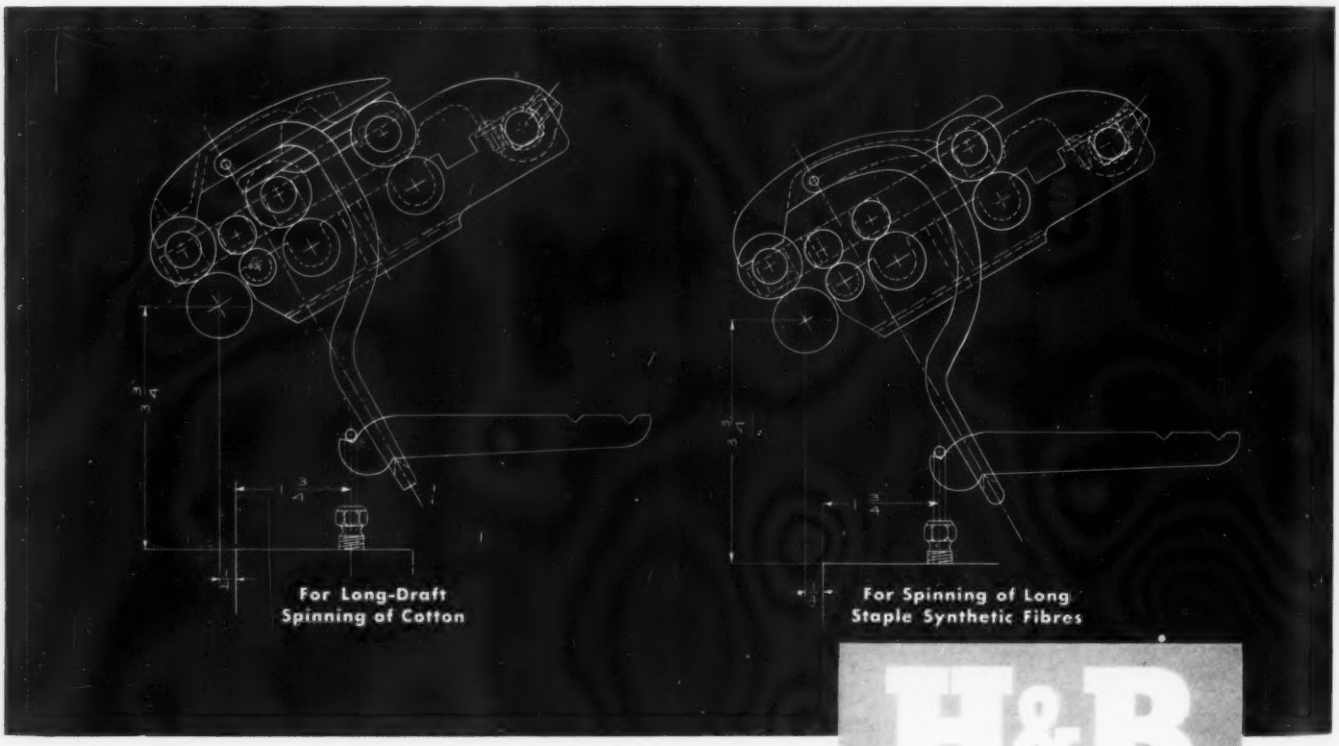
Now the H & B 4-roll Long-Draft Spinning System is easier to maintain, to operate and to change over than ever.

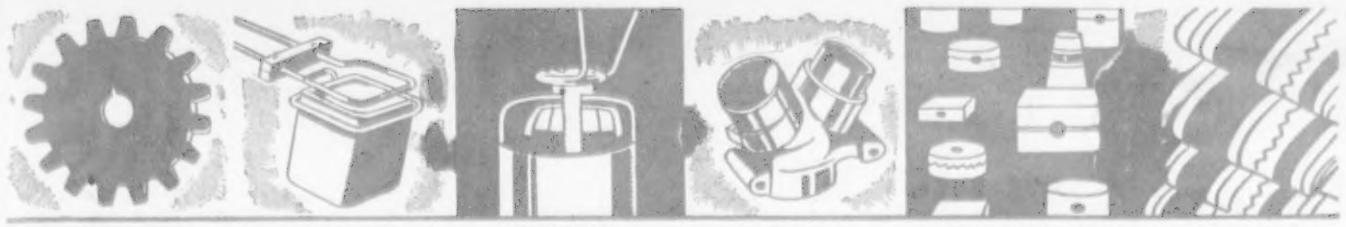
The new patented weighting assembly, designed especially for this system, is streamlined, has a minimum of parts and no adjusting screws. A flick of the brush and it's clean. Its system of oil wells and wicks saves oil, controls distribution and increases the life of roller coverings by keeping oil away from them.

Weighting distribution is positively controlled by one weight for all drafting rolls and the binding of multiple weights under the roller beam is thus eliminated.

The entire assembly is interlocking and may be lifted up as one unit. This greatly facilitates changing over for the spinning of long staple synthetic fibres (further information on request).

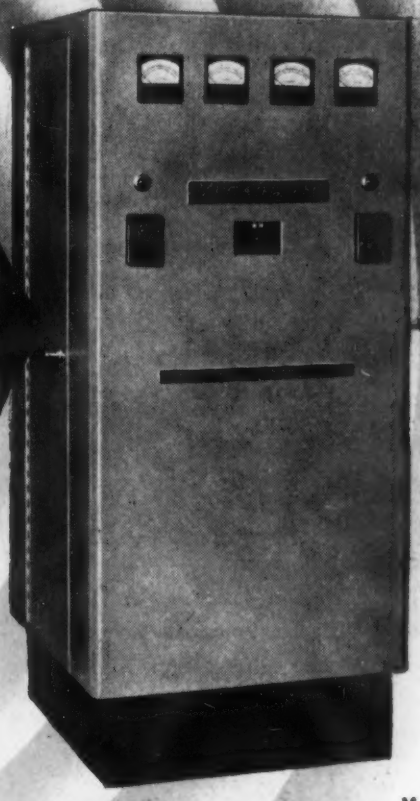
H & B AMERICAN MACHINE CO., Plant at Pawtucket, Rhode Island; Boston Office, 161 Devonshire Street; Atlanta Office, 815 Citizens & Southern National Bank Building; Charlotte Office, 1201-3 Johnston Building.





heat

induction or dielectric



WHEN you need it
WHERE you need it
FAST with MEGATHERM*

Ready . . . at the push of a button . . . MEGATHERM's megacycle energy puts heat *where* you want it . . . instantly!

***Induction* . . . for thin-skin and contour hardening, annealing, brazing and soldering. Ferrous and non-ferrous metals quickly processed!**

***Dielectric* . . . for uniformly heating plastic materials, rubber, food, drugs, wood, textiles and cosmetics . . . rapid defrosting of frozen food!**

There's a MEGATHERM to fit your need . . . and a MEGATHERM Electronic Application Engineer to show you how MEGATHERM electronic heat can help you do a better job . . . build a better product.

Write on your company letterhead *today* for details.

FEDERAL TELEPHONE & RADIO — FTR

Federal Telephone and Radio Corporation

AN IT&T ASSOCIATE

Newark 1, N. J.

*REG. U. S. PAT. OFF.

Are *your* motors developing a Burnout schedule?

Sometimes, even the best designed motors burnout with a regularity that seems beyond control.

For example, a light-metal refining plant has had this experience with one-horsepower motors used to drive the centrifugal pumping system of the fusion pots. The motors were originally designed to run on metal tracks eighteen inches above the fuming surface of the molten metal. The motors were to run 3 minutes at 30-minute intervals.

But, to speed up production, operators left the motors on the tracks, above the fusion pots. So motors insulated with conventional materials burned out at about two-week intervals.

A motor was rewound with Fiberglas* Electrical Insulation and then *permanently* installed in the heat and fumes above the molten metal. The result has been *uninterrupted service*—now for more than a year—even though the motor is exposed to corrosive vapors and ambient temperatures in excess of 250°F.!

HIGH Safety-Factor INSULATION

That's how Fiberglas Electrical Insulation Materials, again and again, have proved their ability to protect motors from "3rd degree" burns—and from the other conditions that cause the majority of motor failures.

Fiberglas Electrical Insulation Materials, made of extremely fine fibers of glass, retain most of the characteristics commonly associated with glass. Being inorganic and noncombustible, they are unaffected by high temperatures. The individual glass fibers do not absorb moisture and will not swell or disintegrate or become chemically affected by oils, most corrosive vapors or acids. Fiberglas, therefore, retains its properties and provides a dependable base for impregnants under the most adverse conditions. Fiberglas Electrical Insulation furnishes a *Safety-Factor* that eliminates many causes of down time—with its consequent expense and production losses.

And remember, the only added cost in rewinding with Fiberglas is the slight difference in the cost of the insulating materials.

ASK FOR FIBERGLAS...IN YOUR NEXT NEW MOTOR...AND ON YOUR NEXT REWIND

FIBERGLAS

*T. M. Reg. U. S. Pat. Off.

ELECTRICAL INSULATION MATERIALS

THERE'S A COMPLETE LINE OF FIBERGLAS ELECTRICAL INSULATIONS
YARNS • TAPE • CORD • SLEEVING • CLOTH AND OTHER FORMS

Fiberglas is also available in Magnet Wire, Special Wires, Varnished Cloth and Tape, Mica Combinations, Laminates, Saturated Sleeving, Varnished Tubing, Pressure Sensitive Tapes—and Special Products.

Fiberglas-base Insulation Materials, in plain and treated forms, are available *now*. For complete information consult your distributor or write for the new Fiberglas catalog. *Owens-Corning Fiberglas Corporation, 1864 Nicholas Bldg., Toledo 1, Ohio.*
In Canada, Fiberglas Canada Ltd., Oshawa, Ontario.

WAX MAKES THE DIFFERENCE

JOHNSON'S
WAX-FORTIFIED
Interior Finish
gives your walls these 4 PLUS features:
Rich, lustrous beauty that only wax-fortification makes possible.
Lengthened decorating cycle because of remarkable durability. Stays clean longer, resists stains, mars and scratches.
Easier cleaning when finally necessary, because of the wax. Film retains its gloss—resists caustic cleaners.
High light reflection longer—better light diffusion. Satin-smooth finish—no harsh glare.
Coming your way! Though not available today, this wax-fortified finish will be supplied just as soon as war restrictions on certain materials are lifted. Now is the time to get all the facts!

in this patented maintenance finish!

Wax impregnation—that's the difference—and that's why Johnson's Wax-Fortified Interior Finish gives you these important advantages! Wax-Fortified has wax *all through* the film. Its rich wax lustre lasts as long as the finish remains—doesn't dull when washed or cleaned, and is easier to clean when necessary. Light reflection values—high at the start—remain high, yet don't cause glare, because light rays are diffused.

Higher maintenance efficiency— lower maintenance costs

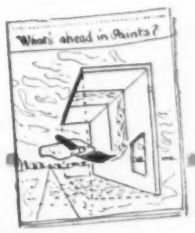
Wax-Fortified is a superior finish—a different finish that gives greater beauty and extra protection. It is made in white and a variety of colors that have broad coverage and great hiding power.

Refinishing is easy

When refinishing is finally necessary, the wax in Wax-Fortified does not retard adhesion and no special cleaning is required. You can recoat with Johnson's Wax-Fortified, or with ordinary paint.

Bakeries, food plants, dairies, factories, office buildings, department stores, schools and hospitals will find Wax-Fortified a boon to solving their painting problems. It will give them a better finish and greatly simplify maintenance.

For full details, mail the coupon today!



★ *Now! Buy VICTORY Bonds—and hold what you have!* ★

Made by the makers of

JOHNSON'S WAX

A name everyone knows

S. C. JOHNSON & SON, Inc., Racine, Wisconsin

S. C. Johnson & Son, Ltd., Brantford, Canada

S. C. Johnson & Son, Inc., Dept. T-125
Maintenance Products Department, Racine, Wis.

Gentlemen: Yes, I'm interested in what "Wax-Fortified" will do for my walls. Please send the "What's Ahead in Paints" brochure.

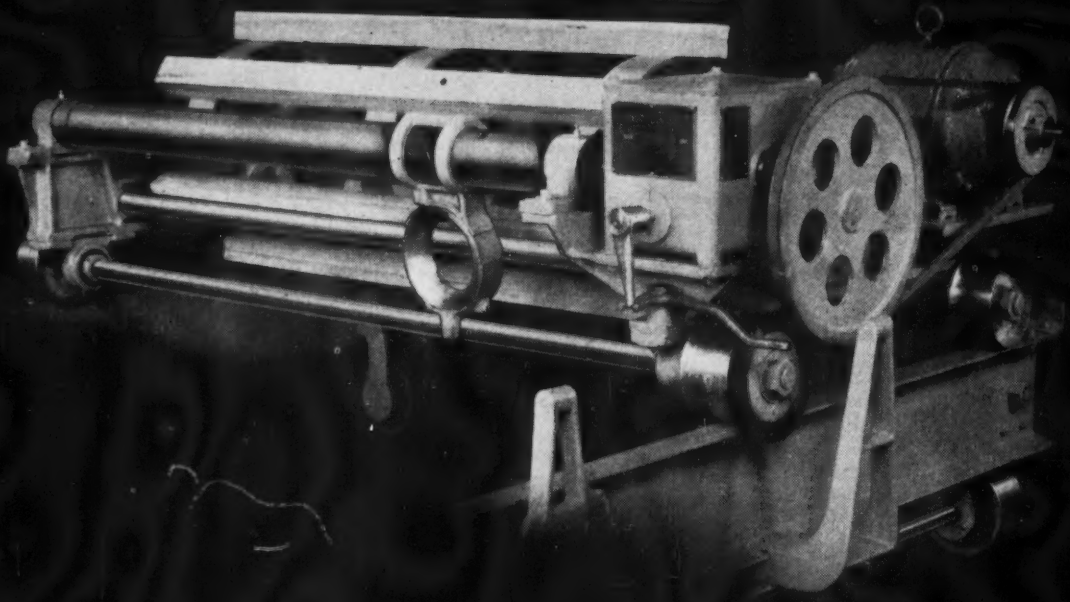
*Name*_____

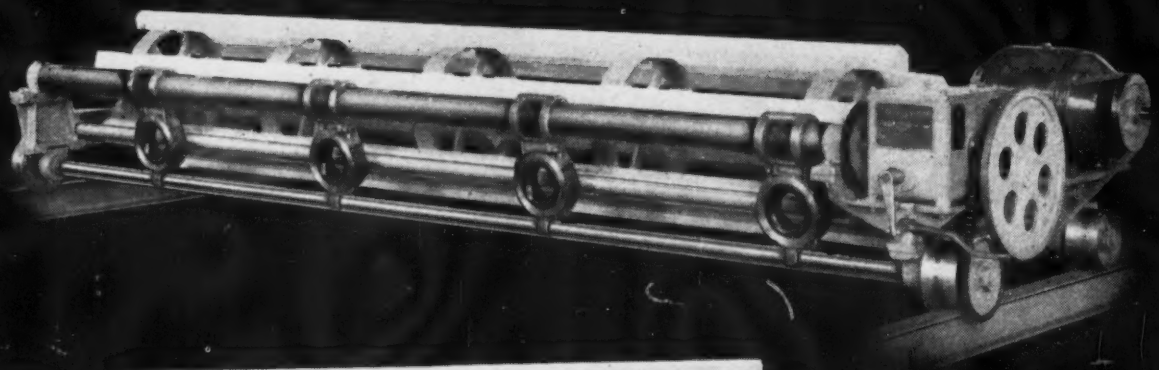
*Address*_____

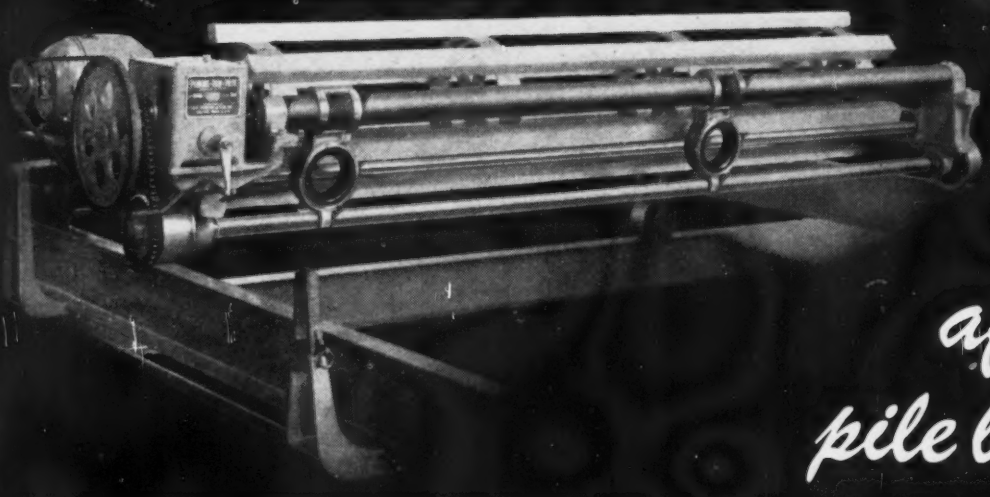
*Business or institution*_____

PERKINS AUTOMATIC BIN PILERS

PATENTED







You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

New PREGWOOD PICKER STICKS!

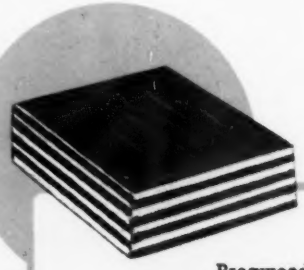
"PREGWOOD" a laminated plastic product made with thin plies of wood, and phenolic resinoids, has made possible a picker stick for all textile looms that lasts much longer and gives more dependable service than wood sticks.

These sticks are much more uniform in strength than any natural product, yet they have the necessary resiliency for the job. They last a minimum of seven or eight times as long as the ordinary wood stick.

Since labor costs are substantial to replace a wood stick, not to count the production lost during the operation, this new stick is a very profitable improvement in equipment.

Pregwood picker sticks are made from Pregwood blanks and sold by the E. H. Jacobs Mfg. Co. through their establishments at Charlotte, North Carolina and Danielson, Connecticut.

THE FORMICA INSULATION COMPANY
4668 Spring Grove Avenue
Cincinnati 32, Ohio



Pregwood is made by impregnating laminations of maple with phenolic resins and curing them under high pressure and heat into a homogenious and very strong and durable material.

FORMICA

Easier, Surer Seeing with G-E Fluorescent Lighting

EVERY textile mill has many critical visual tasks . . . jobs that require alert eyes and quick, sure seeing at all times . . . jobs that get done quicker, better, and at lower unit cost with cool, indoor "daylight" from G-E Fluorescent Lamps.

Workers in the examining and mending rooms are especially pleased with the soft, cool low-brightness illumination of G-E Fluorescent Lamps. They say that they can see better and with greater certainty under this new, quality lighting. And, they don't suffer from eye strain and headaches as they did with the old lights. Fewer accidents, too.

Why not put a G-E Fluorescent installation in *your* mill that will give you the lighting you need for efficient production and lower costs? Consult your G-E Lamp Supplier, the G-E Lamp District Office nearest your plant, or write direct to General Electric Company, Lamp Department, Nela Park, Cleveland 12, Ohio, for free detailed information.

G-E LAMPS

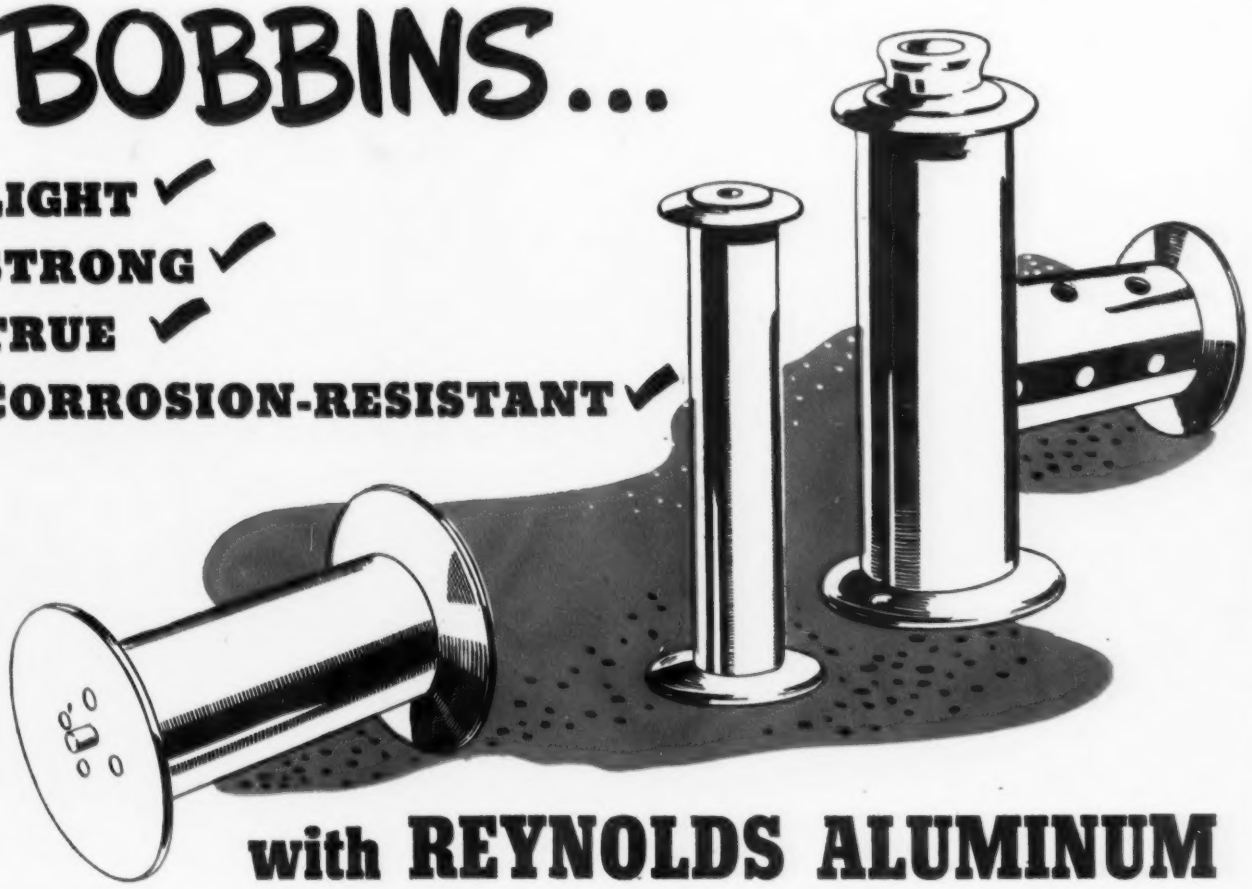
GENERAL ELECTRIC

Research is Always at Work to Improve G-E Lamps and Make Them **STAY BRIGHTER LONGER !**

How UP-TO-DATE are you on ALUMINUM?

BOBBINS...

LIGHT ✓
STRONG ✓
TRUE ✓
CORROSION-RESISTANT ✓



with REYNOLDS ALUMINUM

IT'S ALUMINUM in today's textile mills! That means lighter-weight equipment—less vibration—higher speeds with less wear and tear.

Take bobbins, for example, such as those developed by spool and bobbin manufacturers with the aid of Reynolds technicians . . . they take full advantage of the qualities of aluminum alloys. The combination of characteristics demanded in spinning, twisting, and winding bobbins—lightness, strength, precision, corrosion-resistance, stiffness and smooth finish—is found in aluminum alloys to an outstanding degree.

As a result, the new bobbins fabricated with Reynolds Aluminum alloys are used with all types of fibers and yarns and run smoothly even at highest speeds. They retain their precision—since aluminum products "stay put" dimensionally under normal textile mill conditions.

Consider Aluminum . . . Consult Reynolds. Write for information on sources of supply of aluminum bobbins and spools. Whatever your aluminum interests, Reynolds engineers will gladly work with you. Offices in principal cities. Phone the nearest office or write Reynolds Metals Company, Aluminum Textile Sales Division, 2535 South Third St., Louisville 1, Kentucky.

QUICK FACTS FOR QUICK READING

- **Aluminum alloys developed by Reynolds possess unit strengths greater than many structural steels.**
- **Section for section, Reynolds Aluminum alloys weigh only ⅓ as much as steel.**
- **Highly corrosion-resistant, they withstand the high humidity common to many textile processes.**
- **Permanent dimensional stability reduces vibration, makes higher speeds possible.**
- **Fabricating ease, combined with low material costs insures low over-all cost.**

REYNOLDS METALS

REYNOLDS
The Great New Source of **ALUMINUM**

INGOT · SHEET · SHAPES · WIRE · ROD · BAR · TUBING · PARTS · FORGINGS · CASTINGS · FOIL · POWDER

Is your office full of "SPLIT PERSONALITIES"?

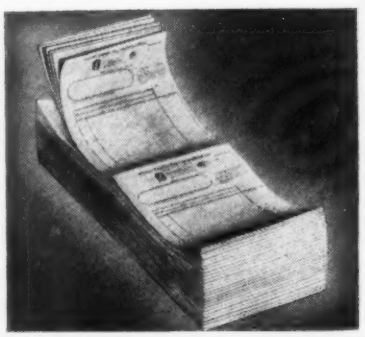
• Ten to one it is! For if your employees must spend time doing unnecessary routine jobs trying to get ready to work—you have "split personalities"—employees forced to split your time and their ability between jobs that matter and unproductive paper rustling.

The cause? Often it's the forms used. Old-fashioned forms that haven't progressed with modern business efforts. Forms that require handwork, carbon stuffing, positioning and other time-wasting jobs that should have been eliminated by design.

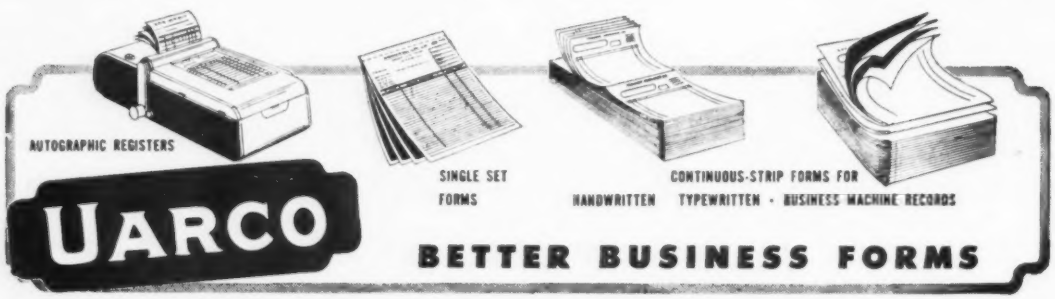
Too often, forms are regarded as mere adjuncts to routine. If this is your case, check the forms you use. Then you may be interested in what UARCO has to show you. For UARCO has made a science of creating better forms . . . forms for the individual business that pay off in savings of time and money . . . forms that simplify and speed work.

Spend a half hour with a UARCO representative. You'll be amazed at the substantial saving of time the right form will bring you. Call in today—or write.

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*



For instance, **UARCO Multi-fold Carbon Set forms. These forms can be used in regular billing and bookkeeping machines, or can turn any standard office typewriter into a continuous forms machine. They are perfectly aligned—carbon filled—consecutively numbered. This particular form offers amazing flexibilities of uses—provides legible, clean copies. For further information, write today.**



HOW MANY *of your Valves are draining Profits?*

When a valve is worn beyond the point of economical repair, it becomes a drain on profits. It may fail at a critical period in processing, ruining large quantities of materials controlled. It may interrupt production when its sudden failure forces a shut-down for repair or replacement. It is certain to require an excessive expenditure of maintenance time, labor, and materials.

Many valves have reached retirement age rapidly under the strain of wartime operation and neglected maintenance. Now that a plentiful supply of valves is in sight, management with an eye to future profits will plan early replacement of worn-out valves.

Jenkins Valve Record Sheets will help you cull out chronic cost-boosters

Only systematic inspection and adequate records will reveal the wornout valves on your pipelines. When your maintenance men jot down the necessary data on the simplified Jenkins Valve Record Sheets, you get a clear, complete picture of a valve's fitness for further use, – can tell at a glance whether repair will be economical, or replacement is advisable.

Your kit of Valve Record Sheets, including complete instructions, will be sent on request. Fill out and mail the coupon today.

Make replacements with Jenkins Valves

Because they are the product of valve specialists, whose leadership in design, choice of materials, and workmanship has long been recognized, Jenkins Valves are your best assurance of the *lowest cost in the long run.* Select the replacement you need from the Jenkins Catalog . . . over 600 patterns for every service.

Jenkins Bros., 80 White Street, New York 13; Bridgeport; Atlanta; Boston; Philadelphia; Chicago; San Francisco. Jenkins Bros., Ltd., Montreal; London, England.

LOOK FOR THIS JENKINS DIAMOND MARK

Jenkins Bros

JENKINS VALVES

SINCE 1864

For every Industrial, Engineering, Marine, Plumbing-heating Service . . . In Bronze, Iron, Cast Steel and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

Sold Through Reliable Industrial Distributors Everywhere

JENKINS BROS.,
80 White Street,
New York 13, N. Y.

Send me a set of Jenkins "Valve Record Sheets"

Name .....

Company .....

Address .....

.....

Better Trucks for YOUR Business!

"Most Satisfactory . . . in Upkeep and Ability"

Blue Bell, Inc., an outstanding manufacturer of men's work clothes, likes Ford Trucks. Mr. C. M. Andrew, purchasing agent of Blue Bell, recently wrote:

"We were fortunate in securing three 1½ ton Ford Trucks at the beginning of the war and they have been used daily ever since. Their operation has been most satisfactory, both as to upkeep and ability to do our job. We do not hesitate to recommend the Ford Truck in any way and the next time we are in the market for additional equipment, we will certainly get in touch with our Ford Dealer."

The new Ford Trucks provide striking evidence of Ford's long truck-building experience. They provide extra value in many new, vitally important engineering advancements . . . features that are designed for even better economy, reliability and longer truck life. See the new Ford Trucks soon. The trucks themselves will convince you they have a place in your business.

Ford

ADVANCED ENGINEERING IN NEW FORD TRUCKS

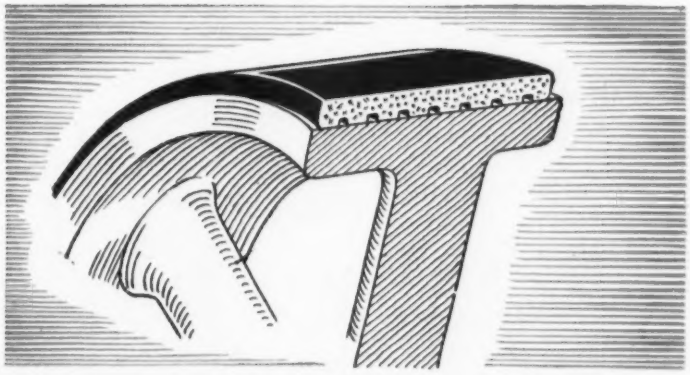
More Economy and Endurance
Easier Servicing

A STILL GREATER 100 HP V-8 ENGINE with NEW Ford steel-cored Silvaloy rod bearings, more enduring than ever in severe service • NEW aluminum alloy cam-ground 4-ring pistons for oil economy • BIGGER, more efficient oil pump and IMPROVED rear bearing oil seal • NEW longer-lived valve springs • NEW improvements in cooling • NEW efficiency in ignition • in carburetion • in lubrication • in ease and economy of servicing operations • And available in all truck chassis except C.O.E. units—the rugged, thrifty 90 HP FORD SIX-CYLINDER ENGINE, with many important advancements.

FORD CHASSIS ADVANTAGES: Easy accessibility for low-cost maintenance • Universal service facilities • Tough, forged front axles • Extra-sturdy rear axles with pinion straddle-mounted on 3 large roller bearings, ¾-floating type in light duty units, full-floating in all others • 3 axle ratios available (2 in 1-ton unit) • 2-speed axle available in heavy duty units at extra cost • Powerful hydraulic brakes, large drums, cast braking surfaces • Rugged 4-speed transmission with NEW internal reverse lock optional at extra cost on light duty units, standard on all others.

FORD TRUCKS

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS



To the man who has never used

TREADED LEATHER BELTING

on textile drives

If you could increase your production per machine even a fraction of one per cent merely by installing a more efficient belting drive, that small expense would soon pay dividends.

Houghton's Treaded leather belting will give you more production because of its flexibility which enables it to hug the pulley at all speeds, and its patented tread which means "more grip—less slip".

By treading the belt, we increase the pulley contact pressure on the raised portion without increasing the total tension or having to run the belt excessively tight. The principle is much the same as that of the non-skid tire; decreasing the contact area increases the resistance to slippage.

The quality of Houghton's VIM Tred and OKAY Tred Leather Belting has not been adversely affected by war shortages. The exclusive tannage and the high quality craftsmanship of belt making are the same today as in pre-war times.

The most efficient short center drive you can install is a combination of VIM Tred Leather Belt and a pivoted motor base whereby uniform proper tension is maintained automatically.

Get the story of treaded leather belting from the Houghton man and you will decide to make the next belt you buy, the best belt you can buy—make it VIM Tred or OKAY Tred. E. F. HOUGHTON & CO., 303 West Lehigh Avenue, Phila. 33, Pa.

Houghton's

TREADED

Leather Belting

Mr. Oakes has a Deputy Dreamer

Like any mill superintendent, Mr. Oakes has been dreaming up the kind of mill he'd have, come peacetime, as he nursed along the limping equipment he had to "make do" during the war.

But Mr. Oakes is smart enough not to do his dreaming alone (which is the reason, no doubt, he got to be superintendent). He knows that he couldn't possibly find the time to dig up all the information he wants to make sure his reconversion plans turn out successfully.

So you'll often see him in a huddle with an expert* who has sat in on thousands of spinning and twisting problems, and seen them through to a successful solution.

That's why, when markets get back to normal, Mr. Oakes knows he'll have equipment that will enable him to match his competitor's best – in yarn quality and price-setting advantage.

***THE VICTOR SERVICE ENGINEER** is the expert Mr. Oakes consults when he talks travelers and related spinning and twisting problems. He knows that the performance of the best frames he can get can be no better than the performance of the travelers.

MORE THAN EVER BEFORE you, too, need this friendly, prompt, result-getting service that has made Victor Travelers standard for over 8,000,000 spindles of spinning and twisting.

NEW FIBERS, NEW BLENDS that will appear more than ever in the peacetime production picture are not new to the Victor Service Engineer. Talk over your reconversion plans with him, traveler-wise . . . he'll call at your request. Write, wire, or phone the nearest Victor Office.

Victor Ring Traveler Company

PROVIDENCE, R. I. — 20 Mathewson St. — Tel. Dexter 0737

GASTONIA, N. C. — 173 W. Franklin Ave. — Tel. 247

Keep a Step *ahead with*

VICTOR Ring Travelers

CROUSE-HINDS

FLOODLIGHTS

The illustrations show a representative selection from the dozens of different Crouse-Hinds floodlights — each designed for its particular purpose. Crouse-Hinds lighting engineers will recommend the proper selection and arrangement of floodlights for any application. Send drawings and details.

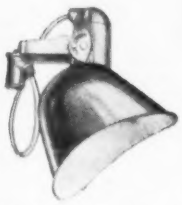
No. 4
of a series of advertisements which demonstrate that CROUSE-HINDS "complete line" means much more than just a range of sizes—there is a wide variety of highly specialized types in each classification.

Type MDB-8
100-Watt

Type MDB-10
200-Watt

Type MDB-14
500-Watt

Type MDB-16
1000-Watt


Type MUA Elliptalux
750 to 1500-Watt

Type MUA Alumalux
750 to 1500-Watt

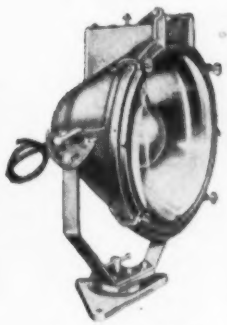
Type ADE-12
Heavy Duty
200 or 250-Watt

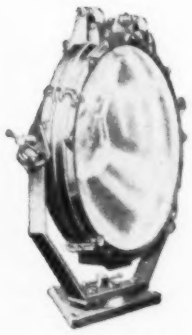
Type ADE-14
Heavy Duty
500-Watt

Type ADE-16
Heavy Duty
1000-Watt

Type ADR-14
Heavy Duty
Portable 500-Watt

Type RCDE-8
Explosion-Proof
Portable
200-Watt


Type LCE-1120
Heavy Duty
1500-Watt


Type LCE-24
Heavy Duty
2000-Watt

Type RCDE-8
Explosion-Proof
200-Watt

Type RMC-8
Wall Mounting
100-Watt

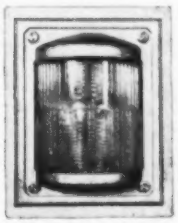
Type RCD-8
Wall Mounting
100 to 200-Watt

Type RCD-8
Floor Mounting
100 to 200-Watt

Type RMF-12
Wall Mounting
150 or 200-Watt

Type FS
Floor Lighting
25-Watt

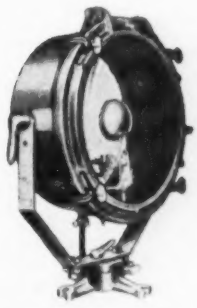
Type VCD-6
Roadway Lighting
60 to 100-Watt


Type VCD-12
Roadway Lighting
200-Watt

Type SPS for
underwater lighting
of swimming pools

Type GCP-14 Lantern
300 to 1500-Watt

Type RLEE-14
Explosion-Proof
500-Watt


Type DCE-18
Long-Range Searchlight

Type DCX-18
Long-Range Searchlight

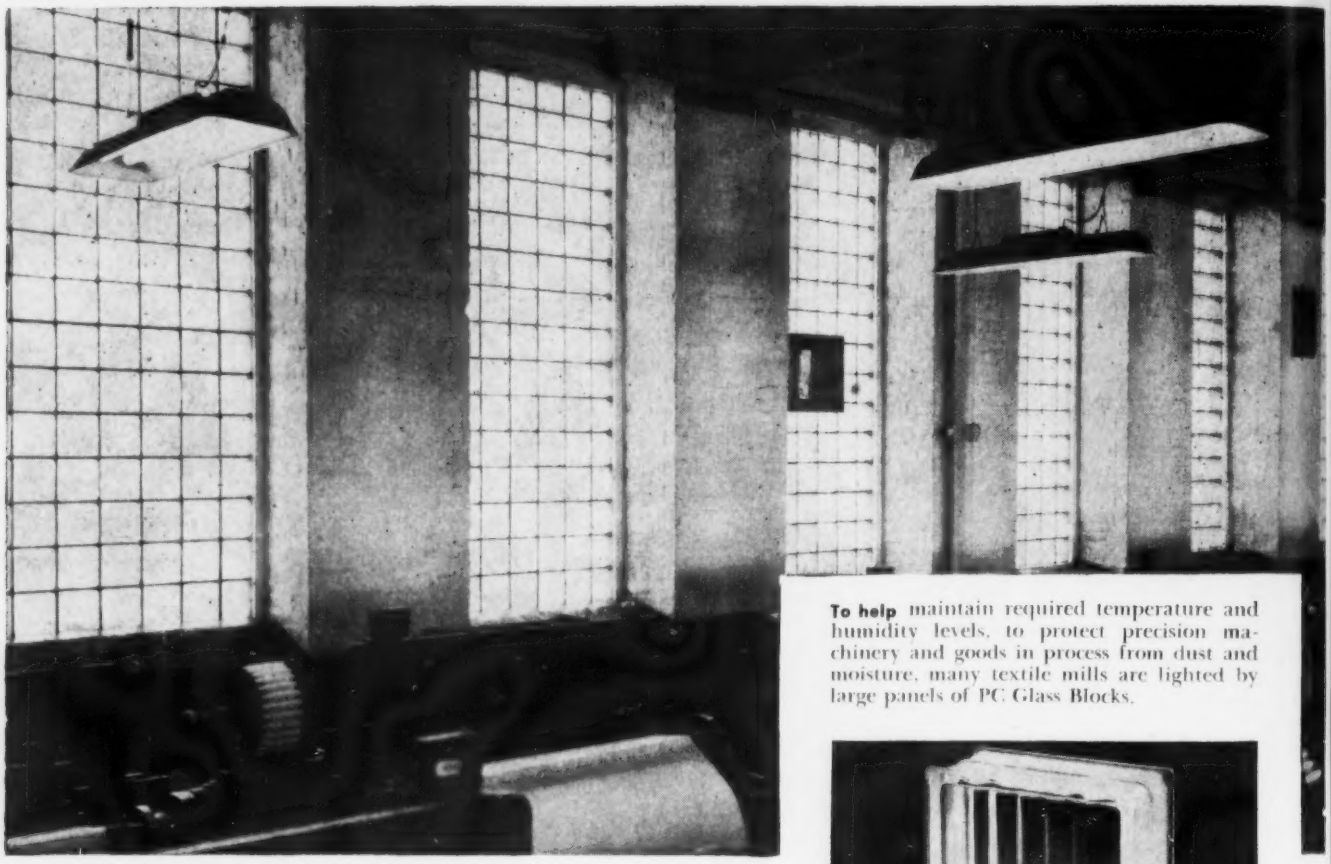
A Nationwide Distribution Through Electrical Wholesalers

CROUSE-HINDS COMPANY
Syracuse 1, N. Y., U.S.A.

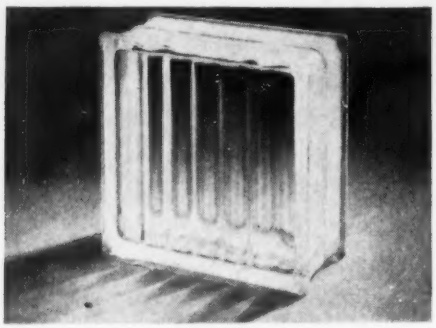
Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Kansas City — Los Angeles — Milwaukee — Minneapolis New York — Philadelphia — Pittsburgh — San Francisco — Seattle — St. Louis — Washington. *Resident Product Engineers:* Albany — Atlanta — Charlotte
*CROUSE-HINDS COMPANY OF CANADA, LTD., *Main Office and Plant:* TORONTO, ONT.

CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

FOR YOUR MILL
money-saving light control with PC GLASS BLOCKS



To help maintain required temperature and humidity levels, to protect precision machinery and goods in process from dust and moisture, many textile mills are lighted by large panels of PC Glass Blocks.



The Argus Parallel Flute Pattern. Especially designed for high light transmission and good light diffusion when laid with flutes either vertical or horizontal. Has smooth outside faces—parallel, identical interior flutes. With easily cleanable, smooth faces, this conventional pattern is designed for both decorative and utilitarian use.

PC GLASS BLOCK construction in your mill insures a combination of good lighting and economy.

PC Glass Block panels assure ample floods of natural light, controlled and directed to meet various needs. Bright, but without glare near the openings. Diffused over wide areas. Transmitted to remote desks and machines. At the same time, by cutting artificial lighting costs and making otherwise waste space produce profits, PC Glass Block construction results in *actual money savings.*

The insulating qualities of PC Glass Block panels lessen heat losses, thereby saving money on fuel and retarding depreciation of heating and air-conditioning equipment.

PC Glass Blocks can be easily cleaned—quickly. They have greater resistance to breakage than other glazings. They eliminate sash repairs and replacements. So there's a big savings in maintenance cost.

Those are some of the economy factors which have helped PC Glass Blocks to win general acceptance among mill owners and superintendents. You can safely be guided by their experience when you include PC Glass Blocks in plans for the construction of new mills or the modernization of existing buildings. Write today for complete, up-to-date information on the full line of PC Glass Blocks. Pittsburgh Corning Corporation, Room 789, 632 Duquesne Way, Pittsburgh 22, Pa.

PITTSBURGH PC CORNING

ALSO MAKERS OF PC FOAMGLAS

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY, PITTSBURGH 22, PA.

O.K. of a Great Critic...

A WHOLE PLANTFUL OF THEM WHO BUILD MOTORS TO SATISFY EXACTING BUYERS!

Other plants may turn out *more* motors than the Star Plant. But you'll find no *better* motors . . . for when you see the Star Trademark you see the "O.K." on the efforts of hundreds of meticulous craftsmen working to critical standards.

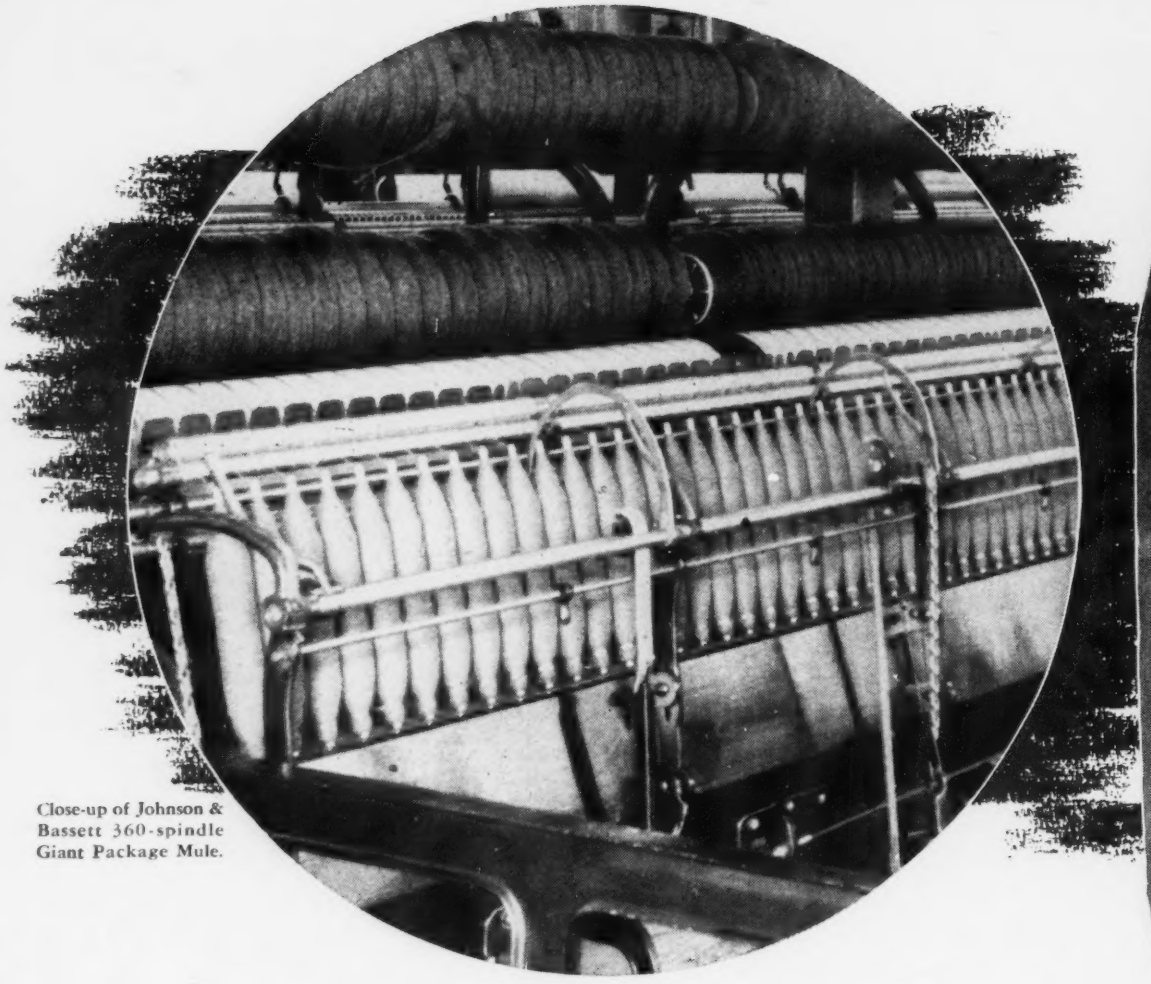
Among them are the men who own the company. For Star's owners are born motor men, and the place to find them is out in the plant or around a drawing board, helping to make Star Motors as good as they can be.

Everybody at Star is exacting about quality . . . in design, materials, workmanship. There's a craftsman's spirit everywhere that words can't cover. But motor buyers who visit us always comment on it. And exacting motor users recognize that Star does things a bit better by specifying Star where a motor must be better than "good enough".

WRITE FOR 8-PAGE DIGEST. It outlines Star Motors (⅛ to 200 HP) and Generators (to 150 KW) . . . names hard-to-satisfy buyers who are long-time customers . . . tells how Star becomes the "Motor Department" for customers. Star Electric Motor Co., 212 Bloomfield Ave., Bloomfield, New Jersey.

STAR MOTORS

POWER PACKAGED AS YOU NEED IT



Close-up of Johnson & Bassett 360-spindle Giant Package Mule.

Super load of *GIANT* package calls for Fafnir Balanced Design

Multiply your yarn package load by seven and you'll see why Johnson & Bassett, Inc., Worcester, Mass. had a real bearing problem. They developed a mule that will spin at high speed a "giant" package 13½" long on a bobbin and 14" long on a tube. Since this giant package holds up to 7¼ times more yarn than the small package, running at the same speed, these new mules save up to 33⅓% of floor space for the same number of spindles and cut spooling time 50%.

Of course a large, heavier yarn package, running at a high speed, calls for ball bearings with out-of-the-ordinary qualities. Beside the added radial load at higher speeds with a heavier package, there's a considerably augmented thrust load. Johnson & Bassett found just what they needed in the famous Fafnir Balanced Design.

The larger balls and deeper races, by giving greater areas of support for both radial and thrust loads, reduce wear and cut maintenance demands, extend life expectancy of the bearings and add still greater freedom from friction.

Fafnir performance is something to keep in mind these reconversion days. Why not write today for a catalog of Fafnir Specialized Textile Bearings? The Fafnir Bearing Company, New Britain, Conn. Branch offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.

Cut-away section of spindle shows Fafnir Single Row Radial Ball Bearings . . . 366 in every Giant Package Mule.

FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

Faith . . . *faith in the future . . . faith in men of good will . . . eternally, these are the essence of the Christmas Season. As we pause to express Greetings to our friends in all those industries we serve, we renew our pledge of unstinted cooperation for the year ahead.*

NATIONAL ANILINE DIVISION • ALLIED CHEMICAL & DYE CORPORATION

Confidence —

Manufacturers may face the post-war adjustment period with greater confidence, if supported by the financial and credit services of a strong factoring organization.

Factoring enables a manufacturer to retain his own capital funds in his own business, instead of providing capital for the customers who buy his products; — at the same time factoring provides for such customers the usual credit terms on their purchases.

The factor assumes all risks of credit losses, and makes available immediately in cash, the net value of shipments as made.

Wider distribution and greater sales volume can be attained through factoring, without risk of credit losses, and on less invested capital.

INQUIRIES INVITED

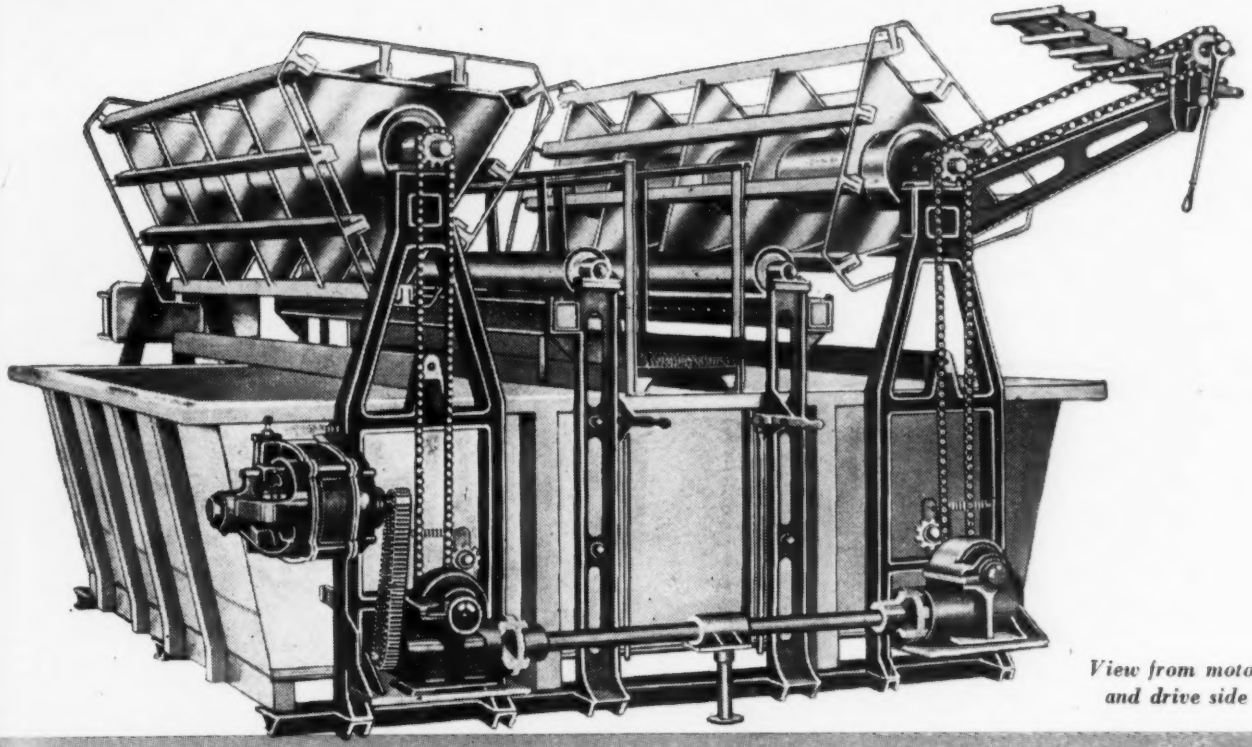
John P. Maguire & Company

INCORPORATED

Factors

AShland 4-4141

370 FOURTH AVENUE, NEW YORK, 10, N.Y.



View from motor and drive side

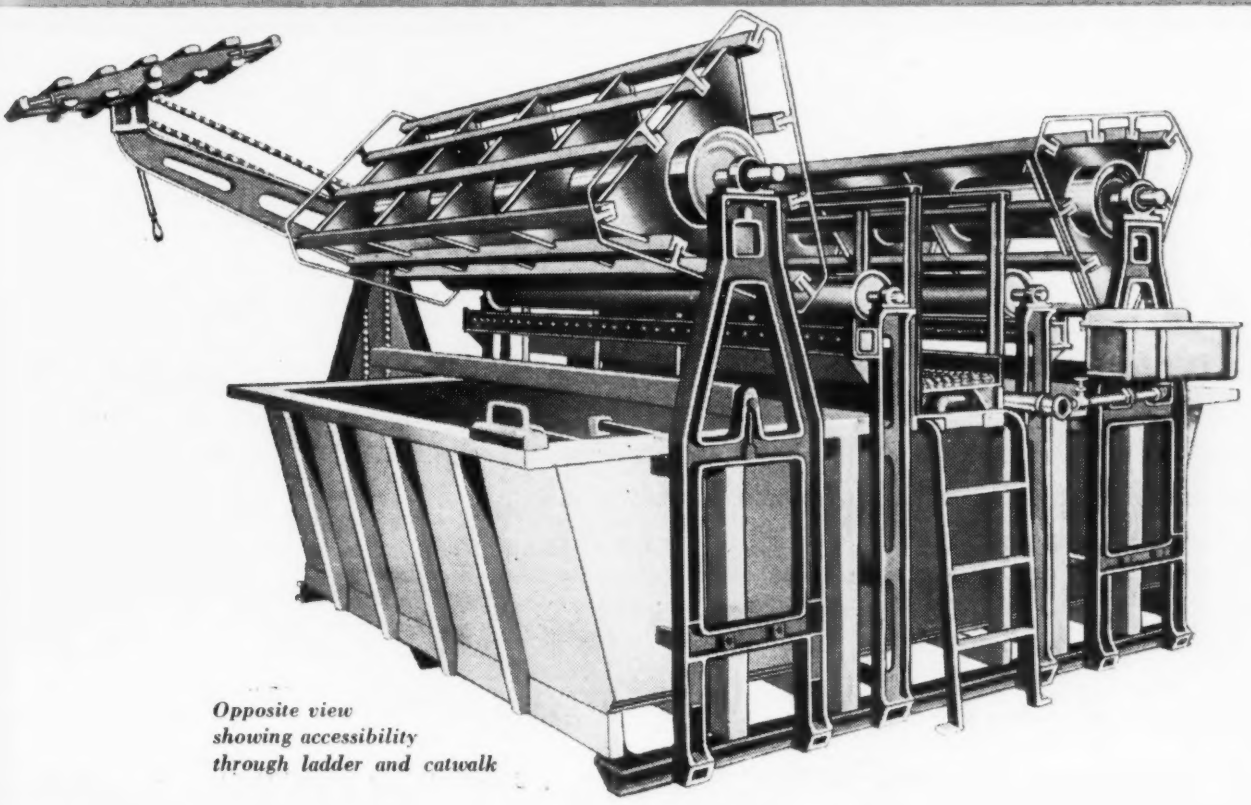
VAN VLAANDEREN *Duplex Reel* DYEING MACHINE

This patented Dyeing Machine is specially designed to do continuous strand form piece dyeing and will accomodate all qualities of goods from lingerie sheers to heavy dress fabrics. It is a decided improvement over the conventional type dyeing machine. It incorporates features, exclusive with Van Vlaanderen Wet Processing Machines, that have proven their practical operation over a period of years.

Built to the accepted Van Vlaanderen standard of ruggedness, this machine is available with stainless steel tubs or with hardwood tubs. The reels are of stainless steel as well as all parts of the machine that come in contact with the dye liquid. Write for new folder giving full information.

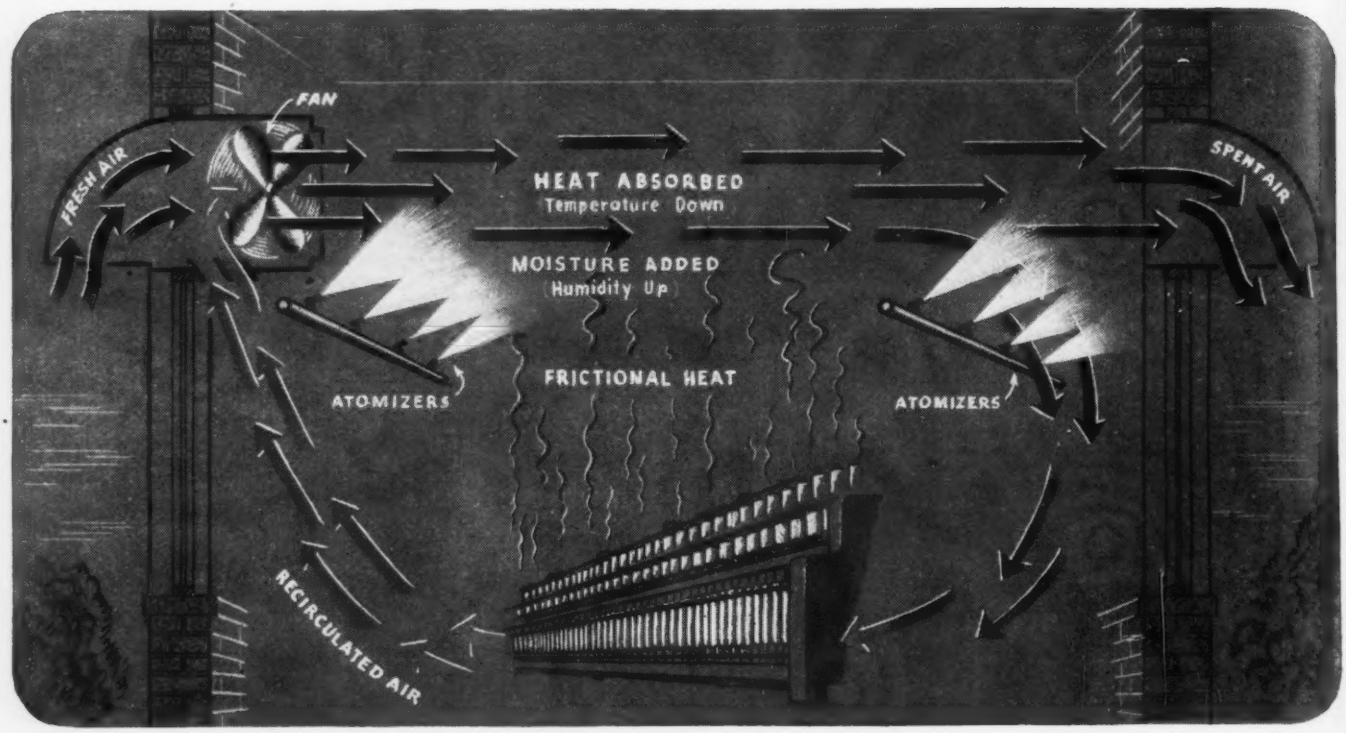
VAN VLAANDEREN MACHINE COMPANY, 370 Straight Street, Paterson 3, New Jersey

World's largest manufacturer of machines for processing modern fabrics



Opposite view showing accessibility through ladder and catwalk

Not an ATOM SMASHER
though it uses ATOMizers



It's the AMCO Evaporative Cooling System!

SIMPLE . . . efficient . . . the AMCO Evaporative Cooling System is ductless and clean. It works like this (see diagram): a controlled amount of fresh air is drawn in from the outside and combined with some recirculated air. Spray delivered from atomizers introduces moisture which is evaporated into the air, raising the relative humidity to the desired point. Frictional heat generated by operating machinery is absorbed by the evaporation of moisture into the air thus reducing excessive room temperature to normal. Spent air is exhausted through automatically controlled vents.

An AMCO engineer will be glad to show you how, with this system, you can prepare for the race for competitive production beginning now.

THE CONTINUOUS PROCESS OF COOLING AND HUMIDIFYING DOES THESE THINGS . . . HAS THESE FEATURES:

- ★ **Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.**
- ★ **Speeds production in high friction (heat) areas.**
- ★ **Assures evener yarn counts and increases breaking strength.**
- ★ **No cumbersome ducts to become clogged and obstruct light.**
- ★ **Easy to install — minimum disruption.**
- ★ **High flexibility to meet changing room conditions.**
- ★ **Minimum maintenance.**
- ★ **Amco Evaporative Cooling utilizes your present humidification system.**
- ★ **Increases workers' comfort.**

AMCO EVAPORATIVE COOLING SYSTEMS

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • . BOSTON • ATLANTA • CHARLOTTE

BETTER* CASTERS CAN CUT COSTS!

In the caster hall of fame
There are certain classics
Bearing an outstanding name—
You can bet they're Bassicks!

***Smoother Rolling** **Easier Swiveling**
Longer Lasting*

Quality casters pay for themselves quickly by cutting repair and replacement costs. But that's only the beginning. Then they really start paying off — with the longest, most trouble-free service life that can be built into modern caster design.

Once you're sure of quality, there are just two things to consider in buying casters: the correct type and size. Careful thought should be given to such questions as these:

- Which type of caster is most suitable for your particular use?
- Has a caster been especially developed for your industry?
- Which type of wheel is best for your floor surfaces?
- Is the size of the caster adequate for the load?
- Will the size and type of caster allow one man to handle the truck easily?

You'll find the right answers in Bassick, the world's most complete line. It has the quality casters you need for the most efficient, most economical handling of your materials. THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corporation. *Canadian Division:* Stewart-Warner-Alemite Corporation, Limited, Belleville, Ont.

BASSICK

Series "99" Swivel
Series "98" Rigid

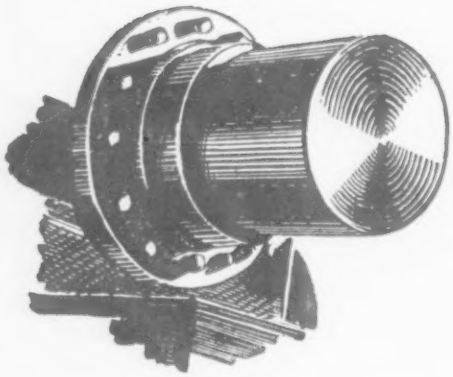
These sturdy, long-lasting casters have been especially designed by Bassick for the textile industry. Wheel diameters 3" to 8" . . . double ball race swivels . . . axle roller bearings . . . semi-steel wheels or treads of durable "Atlasite" or "Baco" soft rubber . . . axle thread guards to prevent fouling. Follow the example of leading textile manufacturers. Specify Bassick quality casters for your new equipment or replacements.

No. 8999-2-1. Bassick 8", Series "99" silent steel caster, showing "Atlasite" wheel, and axle thread guards. An outstanding quality caster used extensively in textile mills.

Making more kinds of Casters... Making Casters do more

Bassick

Today's Production Whirlwind calls



Bearings run as cool as a spring breeze after changing to

TYCOL GREEN CAST GREASES

There was a time when overheated bearings raised havoc with a large plant's production schedules. But now this trouble seems like a bad dream, so cool do bearings run, now that they are lubricated with Tycol Green Cast Greases.

Here is the reason for the excellent results this, and hundreds of other plants get when they change to Tycol. Tycol Green Cast Greases are made from the finest cylinder oil combined with a *minimum* of soap — more lubricating oil, less soap, equals more economical lubrication. Tycol Green Cast Grease is water repellent . . . scientifically engineered to "take it" indoors and out.

Let us help you maintain maximum production by proper lubrication. Have a Tide Water Associated engineer give you full details.

INDUSTRIAL TYCOL OILS-GREASES

TYCOL INDUSTRIAL

ENGINEERED FOR EVERY

for TYCOL
ENGINEERED LUBRICATION

Now more than ever before it is essential to use the best lubricants that can be obtained – for maximum production . . . top efficiency . . . lowest operating cost. That's why more and more operators are turning to Tycol scientifically engineered oils and greases.

Whatever your lubricating need – for mine car or tipple, textile loom or spindle, stationary Diesel or locomotive, steam engine or turbine . . . for extreme pressure, high or low temperature, heavy duty, high speed, or any other service condition – there's a Tycol oil or grease exactly suited to your specific need.

In developing this comprehensive line, Tycol subjects each individual oil and grease to rigid tests during manufacture. This control assures the required lubrication characteristics for maximum performance of that particular product.

Let us prove Tycol Engineered Lubrication efficiency to you . . . show you the extra value in every measure of Tycol oil and grease. Write your nearest Tide Water Associated office for the facts.

*SPECIFIC GRAVITY. Clear, concise descriptions of the basic tests used to determine important lubrication properties — Carbon Residue, Pour Points, Specific Gravity and others — are given in Tide Water Associated "Lubricania". For your FREE copy write: Tide Water Associated Oil Company, 17 Battery Place, New York 4, N. Y.

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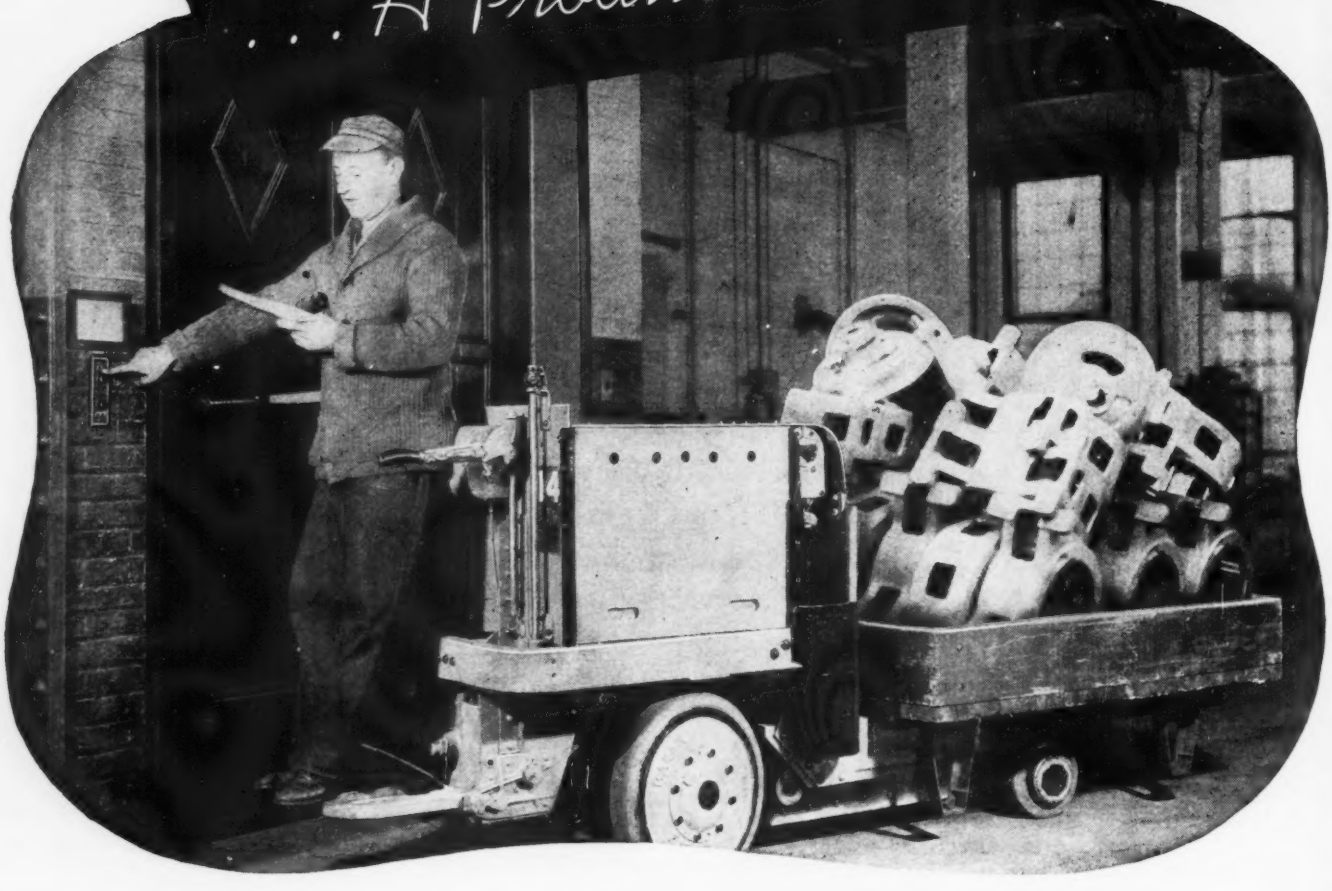
ERVICE NEED

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE • NEW YORK 4, N. Y.

PRINCIPAL OFFICES
BOSTON · PHILADELPHIA
PITTSBURGH · CHARLOTTE, N. C.

OTIS FREIGHT ELEVATORS
. . . A Production Asset



The efficiency of tomorrow's production will be influenced by the handling capacity of freight elevators.

The smooth dependable performance of OTIS Freight Elevators is an assurance of more tonnage hauled . . . more time saved.

OTIS Freight Elevators can be arranged for dispatching to predetermined floors — to fit exactly the requirements of any cycle of operations.

Ask your OTIS representative about Collective Control for high-speed freight elevators and Double Button Control for moderate-speed freight elevators.

For the finest in vertical transportation tomorrow, call your OTIS representative today.

Otis **ELEVATOR COMPANY**
OFFICES IN ALL PRINCIPAL CITIES

Little Packaging Library Here's a treat

for a man interested in packaging—ten booklets on packaging, written by authorities on the subject and condensed for fast, easy reading. The "little library" covers specifying, sealing, stacking, loading, and shipping. It provides complete information on shipments by air express. It tells how to package your product for maximum display and increased sales. These little booklets offer more practical packaging experience than you will find in many textbooks.

TEN BOOKLETS ON PACKAGING

Ten booklets comprise H & D's "Little Packaging Library." They cover, in condensed form, every important phase of corrugated packaging. If you pack your product in corrugated—or if you think your product can be packed in corrugated, be sure to send for the "Little Packaging Library." Get a set for each man in your shipping room.

Hinde & Dauch

AUTHORITY ON PACKAGING

THE HINDE & DAUCH PAPER COMPANY, 4530 DECATUR STREET, SANDUSKY, OHIO

Factories in BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND • DETROIT • GLOUCESTER, N. J. HOBOKEN • KANSAS CITY • LENOIR, N. C. • MONTREAL • RICHMOND • ST. LOUIS • SANDUSKY, OHIO • TORONTO

Leading Builders of Textile Machines Recommend

TRADE MARK REGISTERED

NON-FLUID OIL

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

Because — Tests convinced them that it enables their machines to operate most efficiently at lowest cost of maintenance.

7 out of 10 textile mills save money by using NON-FLUID OIL which prolongs bearing life and saves money by avoiding oil spot "seconds" and outlasting oil 3 to 5 times.

Write for Instructive Bulletin

NEW YORK & NEW JERSEY LUBRICANT CO.

292 MADISON AVENUE NEW YORK 17, N. Y.

Works: NEWARK, N. J.

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NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our exclusive manufacture.

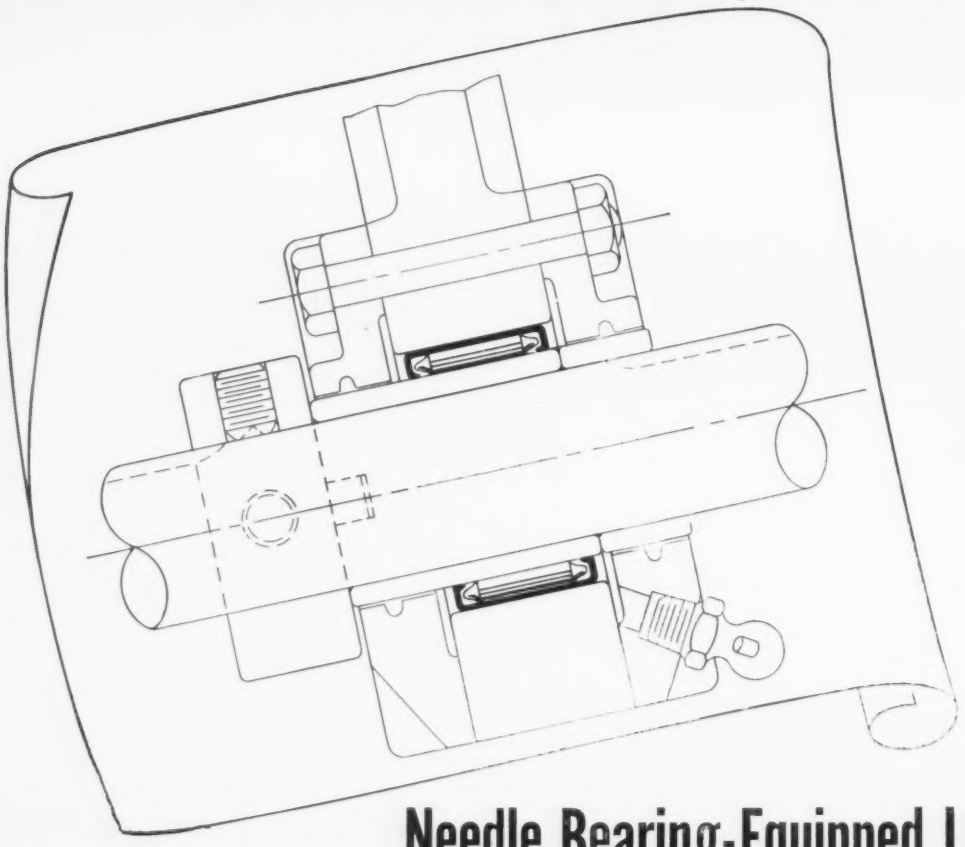
Life Long

PREFERENCES

can be established for merchandise by good knitting, for good knitting means long wear. The machine-made quality of Torrington Needles, which contributes to fine knitting, has helped to establish such preferences for many famous lines of knitwear.

TORRINGTON
Latch Needles

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A.
Established 1866
Branches: New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis
Toronto, Canada



X-Section drawing shows position of a compact Torrington Needle Bearing with special inner race on the Lay Rocker Shaft of a loom. This is one of many advantageous uses of Needle Bearings in textile machines.

Needle Bearing-Equipped Lay Rocker Shafts Increase Loom Efficiency, Reduce Maintenance Costs

Today's stepped-up loom speeds and the heavy beat-ups required on many fabrics impose additional strains on already severely loaded operating units. The use of efficient, anti-friction Torrington Needle Bearings on the Lay Rocker Shafts of looms helps to absorb heavy shock loadings and also solves a difficult maintenance problem.

With the mechanism hard to get at, lubrication is difficult and uncertain, and less frequent attention often results. The close fitting turned-in lips of the Needle Bearing shell, however, provide ample capacity for the storage and retention of lubricant, thus increasing efficiency and reducing maintenance service and cost.

These and other Needle Bearing advantages are important points to consider, whether you are buying new or overhauling or modernizing existing textile equipment. Write for our new Catalog 32, containing complete data on Needle Bearing types, sizes and applications.

THE TORRINGTON COMPANY

Established 1866

TORRINGTON, CONN. • SOUTH BEND 21, IND.

New York Boston Philadelphia Detroit Cleveland Seattle Chicago San Francisco Los Angeles Toronto London, England

TORRINGTON NEEDLE BEARINGS

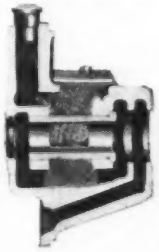
By using Westinghouse loom motors, this mill is enjoying a double saving. In the first place, motor maintenance is held to a minimum. And that means less time out and more time for production. Maintenance costs are reduced because this motor is built especially rugged to withstand the heavy vibration of loom operation. That means extra strength and longer life.

The second saving this mill is making is in power costs. Westinghouse loom motors are designed for unusually high efficiency. Proper relation of rotor weight helps this motor "iron out" some of the peak loads occurring at high frequency in loom drives. The result—increased over-all efficiency and minimum power costs.

With this motor on the job, you can be sure of meeting the strains imposed by new looms before they are "broken in". Ask your Westinghouse representative to give you all the facts. Westinghouse Electric Corporation, East Pittsburgh, Pa. J-94615

NO STARVED BEARINGS
NO OVER-OILING

Westinghouse design eliminates both the danger of wicking of oil from motor bearing housings and waste from excessive oil. Oil cups are located far enough above the bearing to prevent accumulation of lint from wicking oil from housing. If too much oil is added, overflow drains excess oil outside the end brackets.



Showing construction of Westinghouse loom motor lubrication system.

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Loom Motors

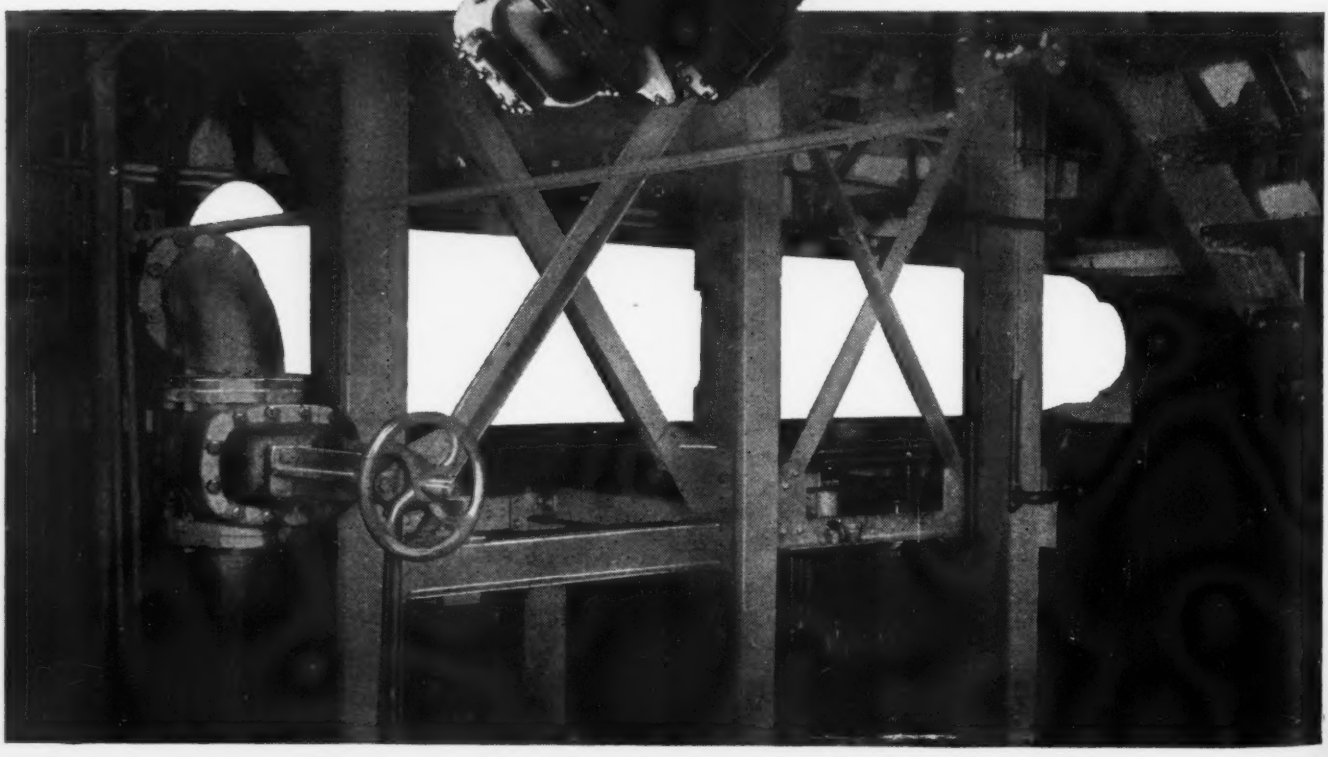
"This CONDENSER will just fit in our Plant"

Yes, it will just fit, because there is an I-R condenser to fit the needs of any plant. It will fit into your operation and maintenance schedules too. You will find it highly efficient and you will find that it requires a minimum of maintenance attention.

There is a complete line of Ingersoll-Rand steam condensers and steam-jet ejectors for prime mover application and for other vacuum services. Ask the Ingersoll-Rand service engineer for further details. Ingersoll-Rand Company, 11 Broadway, New York 4, N. Y.

Ingersoll-Rand

4-509



TEXTILE MILLS USE

Condor

WHIPCORD V-BELTS

for Smoother, Steadier Power Application

Yarn breakage on textile spinning machines is reduced. Time lost in making repairs is cut down drastically, because Condor Whipcord V-Belts work as a precisioned team. Starting is smooth, acceleration is uniform. No jerks and shocks, nor lost motion and wasted power. Control is positive. Service and speed are dependable—and long lived. The Whipcord *Strength Member* has low inelastic stretch and is scientifically cushioned in *Flexlastics* for good gripping and cool running at high speeds.

The term FLEXLASTICS is an exclusive Manhattan trade mark. Only Manhattan can make FLEXLASTICS . . . Manhattan Belts will be made in the red color when again possible.

8 POINTS of ADVANTAGE

are evident in the cross-section shown here:

- Wide margin of strength
- Minimum inelastic stretch
- Uniform flexibility
- Maximum resistance to structural breakdown
- Smooth running
- Maximum traction
- High resistance to side wear
- Correct lateral reinforcement

These 8 Points are correctly embodied in every Condor V-Belt. Other factors being equal, the useful life of a V-Belt is limited by excessive stretch

Condor PRODUCTS

for the Textile Industry

Transmission Belts	Rubber Covered Rolls
V-Belts	Textile Specialties
Cone Belts	Loom Strapping
Air, Water and Steam Hose	Sand Roll Covering
Acid Hose	Oilless Bearings
Fire Hose	Pot Eyes
Vacuum Hose	Rub Aprons

Rubber Lined Tanks

NAVY E

RM

THE MANHATTAN RUBBER MANUFACTURING DIVISION

of RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES and FACTORIES • • • PASSAIC, NEW JERSEY

There's a POWELL VALVE for every service in the Textile Industry

The Powell Line of Valves for every service in the Textile Industries includes bronze, iron and steel valves of all types and pressures needed to control flow in water and steam lines; a complete line of valves in pure metals and special alloys for handling dyes, acids, mordants, bleaching solutions, etc.; and, in addition to the more common types, Powell has developed a line of Flush Bottom Tank Valves, specially designed to drain metal tanks (with or without steam jackets), glass or vitreous lined tanks, and autoclaves. These valves, made in various pure metals and special alloys, are made on special order only. Full information on request.

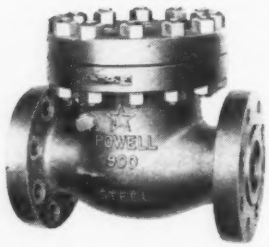
The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

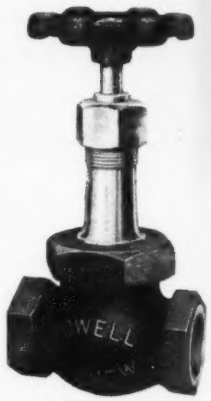
125-pound Iron Body Bronze Mounted or All Iron O. S. & Y. Gate Valve.

200-pound Bronze Gate Valve with renewable disc.

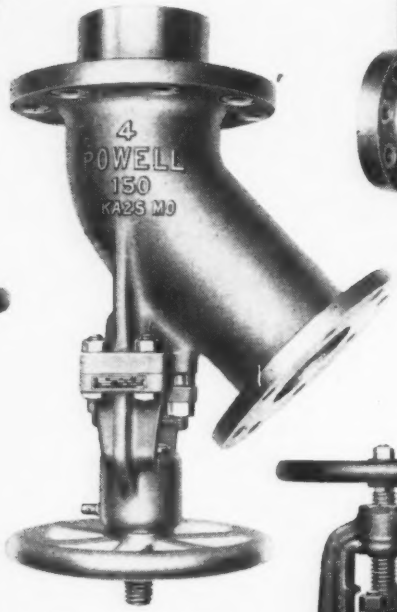
200-pound Bronze Globe Valve with regrindable, renewable seat and disc.



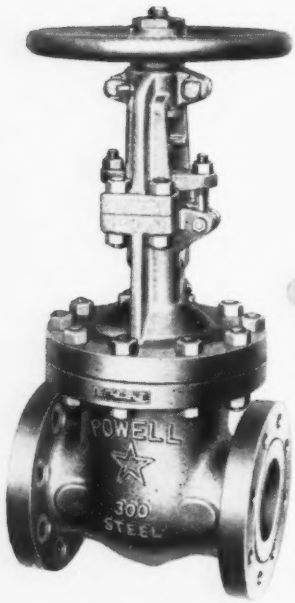
Class 900-pound Cast Steel Swing Check Valve.



150-pound All Iron Globe Valve.

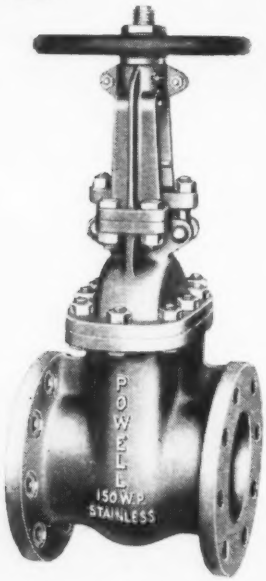


150-pound Stainless Steel Flush Bottom Tank Valve.

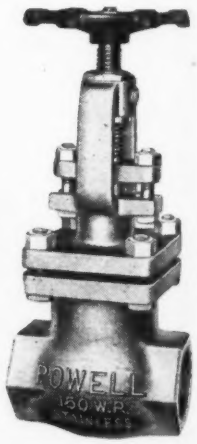


Class 300-pound Cast Steel O. S. & Y. Gate Valve.

125-pound Iron Body Bronze Mounted or All Iron O. S. & Y. Globe Valve.

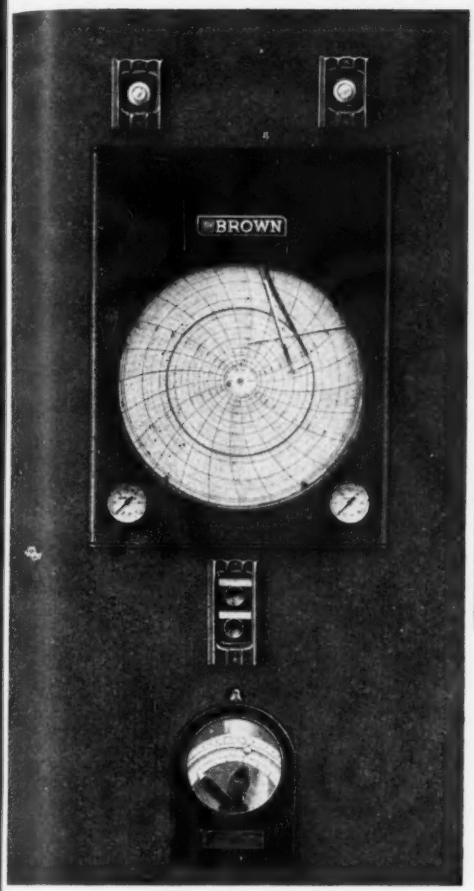


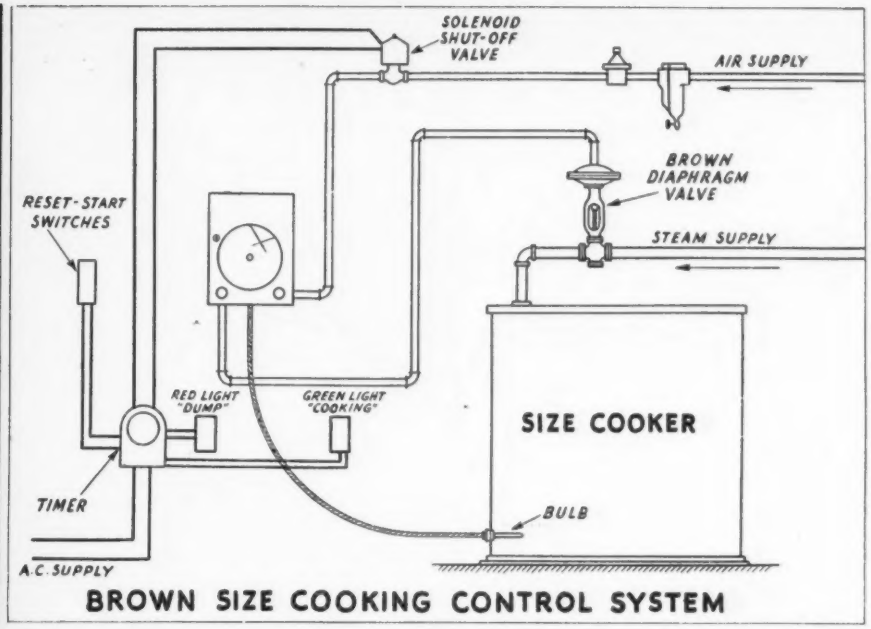
150-pound Stainless Steel O. S. & Y. Gate Valve.



150-pound Stainless Steel O. S. & Y. Gate Valve.

POWELL VALVES





BROWN SIZE COOKING CONTROL SYSTEM

Completely installed—includes Brown Recording Thermometer Controller (air-operated 10% Throttlor), Diaphragm Valve, Timer, Solenoid Valve, Switches, Signal Lights and all accessories

How to get UNIFORM SIZE COOKING

To secure uniform results in sizing cotton yarn or cloth and to avoid streaky, defective goods, the sizing preparation must always be of the same viscosity, which means that it must be kept at the same temperature constantly from batch to batch.

Size Cooking with the Brown Time-Temperature Control System prevents lumping and assures that the product contains no undissolved starch.

During the cooking period steam is throttled down to give slow, even cooking with the temperature never varying from the desired control point. There is no risk of "boiling over" and it frees the operator for other duties.

The Brown Thermometer Controller throttles steam flow so the temperature of the kettle is dropped to that of the storage kettle and held there indefinitely, or automatically shuts off the steam at the end of the cooking cycle.

When the kettle is dumped and refilled, the operator then pushes an external button which automatically resets the control system for another cook, without opening the instrument door.

The Brown Size Cooking Control System is simple in operation and quick in response. The flexibility of the Brown Thermometer Controller provides any desired cycle of control which can be obtained by simply setting the time period and the temperature control point. The rest is automatic. This means dollars and cents savings in obtaining uniform size cooking.

Write for catalog. The Brown Instrument Company, *a division of Minnapolis-Honeywell Regulator* Co., 4509 Wayne Avenue, Philadelphia, 44, Pa. Branch offices in all principal cities.

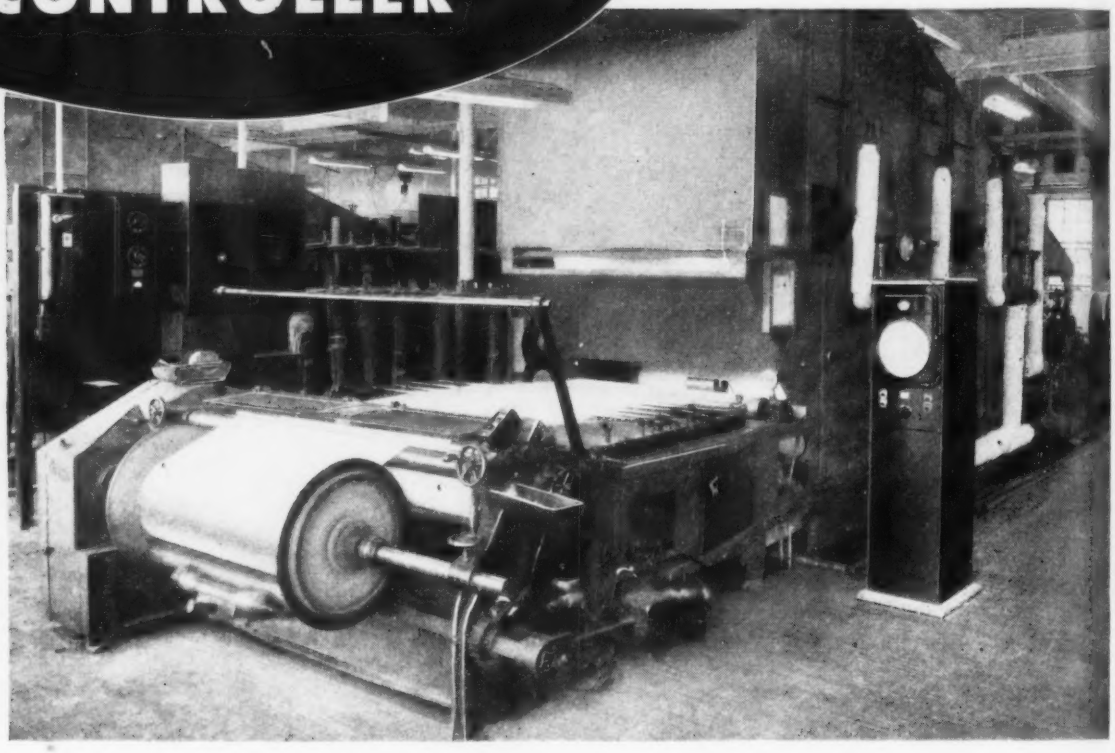
BOSTON OFFICE—799 BEACON STREET

ATLANTA OFFICE—4 N. RHODES CENTER

BROWN THERMOMETER CONTROLLERS *and* MINNEAPOLIS HONEYWELL CONTROLS

BARBER-COLMAN MOISTURE CONTENT CONTROLLER

AUTOMATIC ELECTRONIC CONTROL OF REGAIN AT THE SLASHER GIVES MORE UNIFORM QUALITY PRODUCT AND INCREASED PRODUCTION



EASILY ADAPTABLE

TO ANY ELECTRICAL OR MECHANICAL SPEED-CHANGING UNIT ON EXISTING SLASHERS

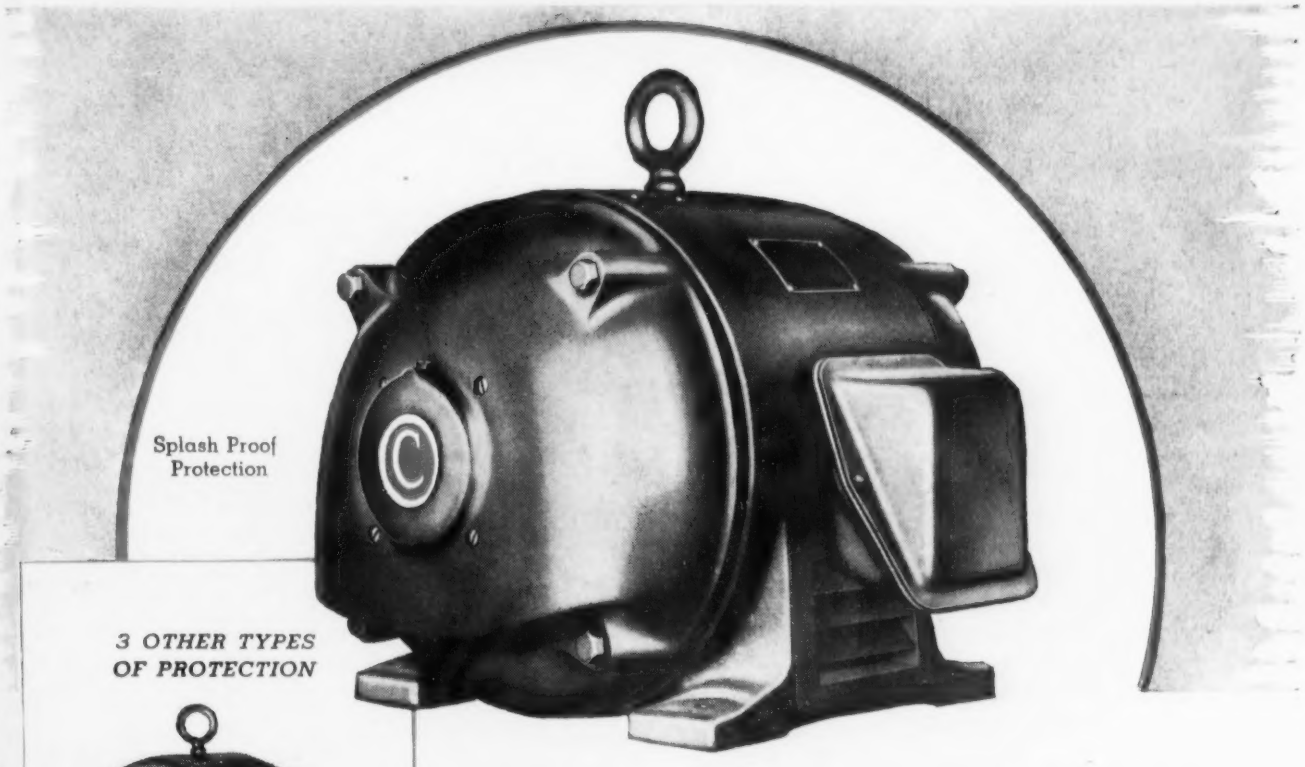
The Barber-Colman Moisture Content Control system includes speed control units which are adaptable to whatever type of speed-changing equipment is now incorporated in your slashers. These may include the conventional cone pulley drives or one of the many types of electrical or mechanical variable speed drives now available. No major changes are necessary on your present slasher equipment when you add the Barber-Colman moisture Content Control system. Barber-Colman equipment is outstanding in that it provides true *proportioning* control. When a small correction is needed, only a small change of speed will be made; when a large correction is called for, a large change of speed will be made — but always in a single complete move *without overcorrection or "hunting"*. Production for a given slasher and slasher room investment is always maintained at peak levels.

For details on the principles, features, advantages, and the benefits to be gained from Barber-Colman Moisture Content Control equipment, send for this brochure. Ask for Bulletin F-1705-1.

Barber-Colman Company

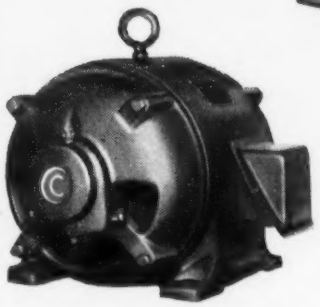
45 YEARS EXPERIENCE SERVING TEXTILE MILLS

ROCKFORD ILLINOIS BOSTON MASSACHUSETTS GREENVILLE SOUTH CAROLINA GREENSBORO NORTH CAROLINA ATLANTA GEORGIA

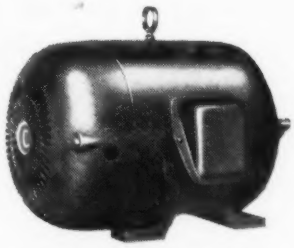


Splash Proof Protection

3 OTHER TYPES OF PROTECTION



Form J — General Purpose Application



TEFC — Protects Against Destructive Dust, Grit, Powdered Materials

Century Explosion Proof Motor

Where There Are Splashing Liquids

Guard Against Production Losses With CENTURY SPLASH PROOF MOTORS

Whether yours as an installation is subjected to splashing liquids — or whether your electric motors must withstand plant washdowns — Century Splash Proof motors will give you protection.

Of course, any falling solids are also kept out of the operating parts of the motor by Century's proven splash proof construction.

Special insulation is available for higher concentrations of acids and alkalies.

Wherever your electric motors must operate in conditions such as these, for safety's sake, specify Century Splash Proof. A Century engineer will be glad to give you complete details about the advantages of Century motors as they apply to your job.

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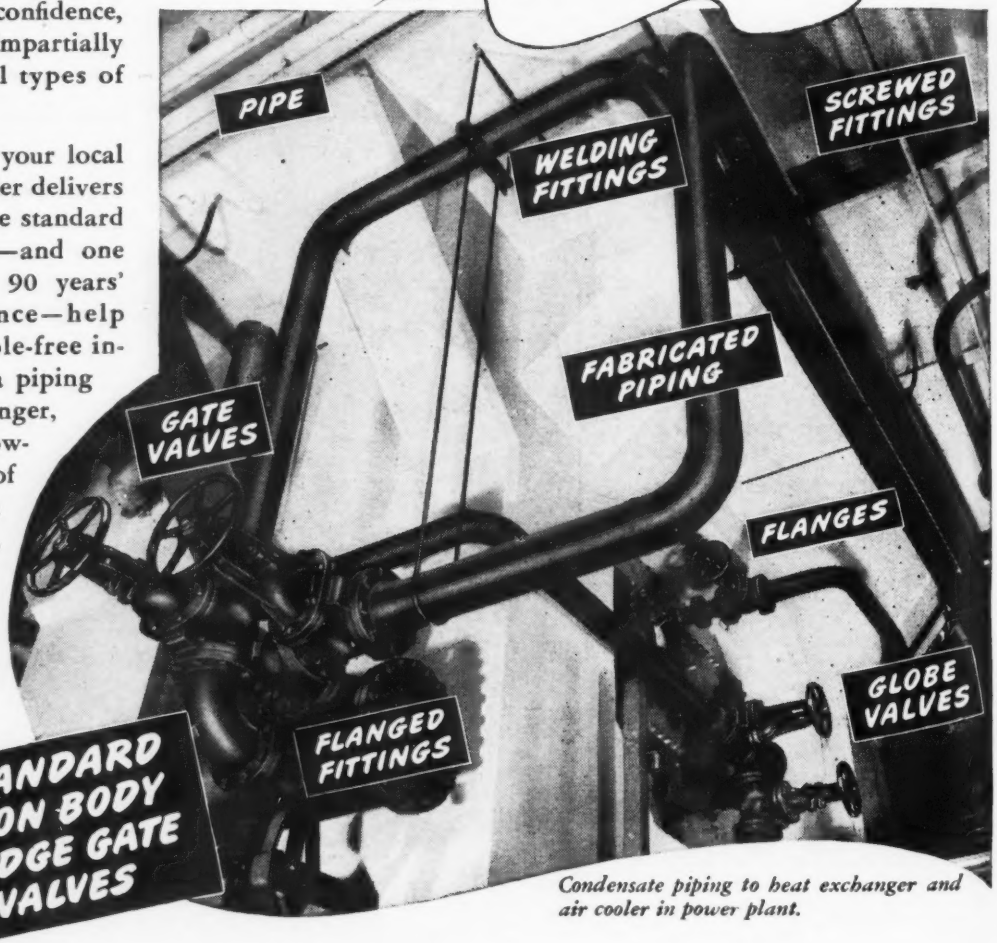
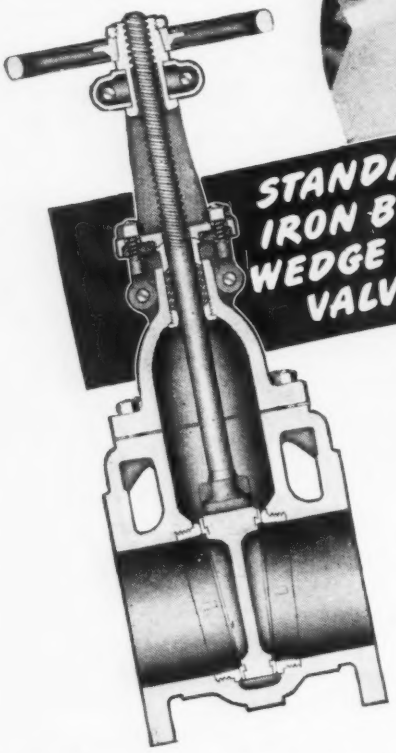


Condensate piping to heat exchanger and air cooler in power plant.



STANDARD IRON BODY WEDGE GATE VALVES

SERVICE RECOMMENDATIONS: **Crane Standard Iron Body Wedge Gate Valves** are suited for many services in factories and power plants, at all working pressures up to 125 pounds steam. Brass trimmed valves are recommended for steam, water or oil lines; all-iron valves for oil, gas or fluids that corrode brass but not iron. Made in O.S. & Y. and Non-Rising Stem patterns. See page 101 of your Crane Catalog.

WORKING PRESSURES

Size of Valve	Screwed or Flanged End Valves		Hub End Valves
	Saturated Steam	Cold Water, Oil or Gas, Non-Shock	Cold Water or Gas Non-Shock
2 to 12 in.	125 pounds	200 pounds	200 pounds
14 and 16 in.	125 pounds	150 pounds	150 pounds
18 to 24 in.	*	150 pounds	150 pounds

*For steam lines larger than 16-in., Crane 150-Pound Cast Steel Gate Valves are recommended. (For sizes under 2-in., use Crane Clamp Gate Valves.)

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HARLEY W. MAGEE

Editor: Newspaper reporter, staff writer and, at one time, city editor for Associated Press in Chicago . . . formerly managing editor of Popular Mechanics . . . a writer with long experience in interpreting science for the lay reader.

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Editorial Consultant: Editor of Army Air Forces magazine, "Radar" . . . formerly staff member Radiatron Laboratory Massachusetts Institute of Technology . . . formerly member of Fortune's Editorial Staff . . . first editor of Tide.

To bring you this month by month reporting of progress and achievement McGraw-Hill has assembled the finest talent available. Working hand in hand with the men pictured here is a top-flight staff of science writers, artists and photographers . . . men with long experience in making science *understandable* and *interesting*.

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N.B. to Advertisers: *What kind of an audience will be available to you in SCIENCE ILLUSTRATED? Obviously, an alert, intelligent, forward thinking group of people . . . the sort of people that are a step ahead of the parade in interests, desires and purchasing power. The initial print order will be 500,000 copies. Forms close on February 10th for the April issue. Write to SCIENCE ILLUSTRATED or telephone your nearest McGraw-Hill office for complete information.*

FIRST ISSUE ON THE NEWS-STANDS APRIL, 1946

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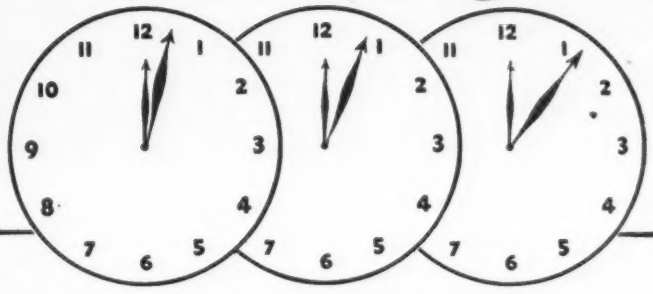
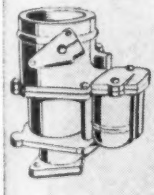
How to Cut Metal Cleaning Time to MINUTES



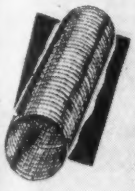
NEW, FAST-ACTION DETERGENT CLEANS FERROUS AND NON-FERROUS METALS...Easy to Handle

TYPICAL USES FOR Solvent "26"



CARBURETORS—Solvent "26" removes gum, gasolene sediment and other accumulations of dirt.

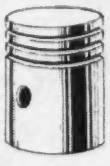
SPARK PLUGS—Solvent "26" safely cleans porcelain; helps loosen carbon deposits.



METAL PLATES AND SCREENS—Solvent "26" restores clear, clean finish to any metal surface.

DIES AND STAMPING—Solvent "26" removes drawing compounds from die-formed or stamped metal.

LABORATORY EQUIPMENT—Solvent "26" frees glass and metal tubing and their supports of gums, varnishes and other incrustations or deposits.



PISTONS—Removes lacquers, gums, resins, etc. from gas, gasolene and diesel engine pistons and rings. Also effective for cleaning all parts of dismantled motors, engines and machinery.

REMOVES:

Oil • Grease • Gums • Varnishes • Lacquers • Paints
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Used throughout the war in critical industry as a superior cleaning agent, newly-developed SOLVENT "26" is now available for all industrial needs.

Offering many advantages in time, labor and cost over other present cleaning methods . . . Solvent "26" is so effective a detergent it can be used at *ordinary* room temperatures.

The fast action of Solvent "26" reduces cleaning time from hours to minutes on dismantled engine parts and all kinds of machinery. Simply dip, rub, brush or spray it on. Then flush clean with hot water.

Mail the coupon today for literature and information leading to a demonstration of this unique product in your own plant.

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Machine Tool Builders . . .

HERE'S REAL CLUTCH PERFORMANCE

For your new machines . . . for improved operation, check on the new advantages inherent in the Maxitorq Floating Disc Clutch. Here's a clutch that "comes out in the open". You can see every part. Without using any tools . . . not even a screw driver . . . you can take it apart, assemble, adjust it.

Separator Springs (a Maxitorq patent), used between the discs, "float" them in neutral. You can see between them. That means no drag, no abrasion, no heating in neutral. Thus, disc life is prolonged. There's no question about instant and positive engagement and disengagement . . . controlled with the lightest pressure.

This is a worthwhile clutch specification for your new applications . . . especially since Maxitorqs cost no more, often less, than less satisfactory units.

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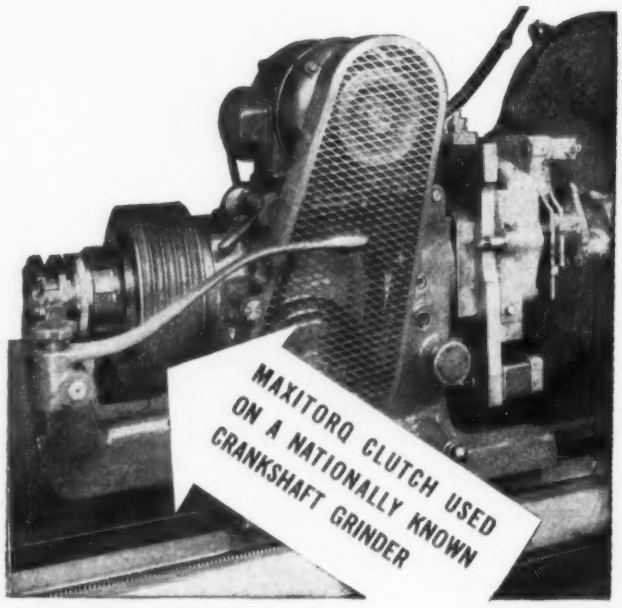
Maxitorq clutches are made in single and double (above) types, wet or dry. Pulley and cut-off coupling types also made. Capacities from ¼ to 15 H.P. at 100 R.P.M.



"MAXITORQ" *approved for . . .*

The fast growing number of satisfied Maxitorq users is assuming the appearance of a "Who s Who" list of nationally known machinery manufacturers. A grinding machine, equipped with a Maxitorq, is shown above; others include packaging machinery, can labeling machines, commercial ice cream freezers, multi-spindle automatics, food, shoe and textile machines . . . and a host of others of equal importance.

They couldn't take a chance on any but top class power transmission equipment. Neither can you. So look to Maxitorq for dependable solution of your problems.

ASK FOR CATALOG NO. 4512

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"WHITE Upper Walls and Ceilings Reflect the Maximum Amount of Light . . ."

SAYS LAROS

R. K. LAROS SILK COMPANY
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September 7, 1945

U. S. Gutta Percha Paint Company
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Gentlemen:

In the manufacture of our product, we have always believed that good plant housekeeping reflects itself in the quality of the goods produced. Paint plays an important part in our housekeeping program.

Interiors which reflect light properly add to the efficiency and the attractiveness of a plant. White upper walls and ceilings reflect the maximum amount of light, whether the source of light is artificial or natural.

We have always considered Barreled Sunlight the ideal paint for upper walls and ceilings. For the past twenty-five years, we have been users of your product because it does the job for which it is intended.

Very truly yours,

R. K. LAROS SILK COMPANY

Jerome Barney
Superintendent

JB:LL

SINCE Laros Lingerie is nationally known for its excellent quality, it is not surprising that its manufacturers believe quality begins with "good plant housekeeping", and that WHITE paint plays an important part in their housekeeping and efficiency program. The Laros letter herewith reiterates a fact which has been known by lighting engineers for years: namely, that paint and light are *partners* in creating good seeing conditions and hence, in increasing production.

A good WHITE paint of lasting whiteness is best for ceilings and walls because it has maximum reflectivity, eliminates glare and gloomy shadows through proper *distribution* of light over the whole working area, and gets the most out of both natural and artificial light.

Our booklet, "Color for Industry", tells more about the partnership of Light and Paint in promoting and prolonging the efficiency of your workers. Send for a free copy of this helpful booklet TODAY.

DATE.....

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Please send us, without charge or obligation, a copy of your 16-page illustrated booklet entitled "Color for Industry".

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Those millions of dollars stolen annually by rust's scaly fingers . . . why let them be your dollars? Stop the rust thief in your plant!

Sinclair preventives that helped solve the war's tremendous rust problems are available to end *your* rust troubles. Whether it be protection for

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- machinery in short-time or extended storage,
- machinery in transit,
- piping, shafting, etc., exposed to corrosion,

there's a Sinclair *war-tested* preventive that *stops* rust . . . extends equipment durability . . . lengthens the life of metal installations.

Sinclair rust preventives are easily applied, easily removed – and they protect both internal and external surfaces.

Write us for information about application of Sinclair Opaline* RP Oils, and Sinclair Rust-O-Lene* rust preventives to your problems.

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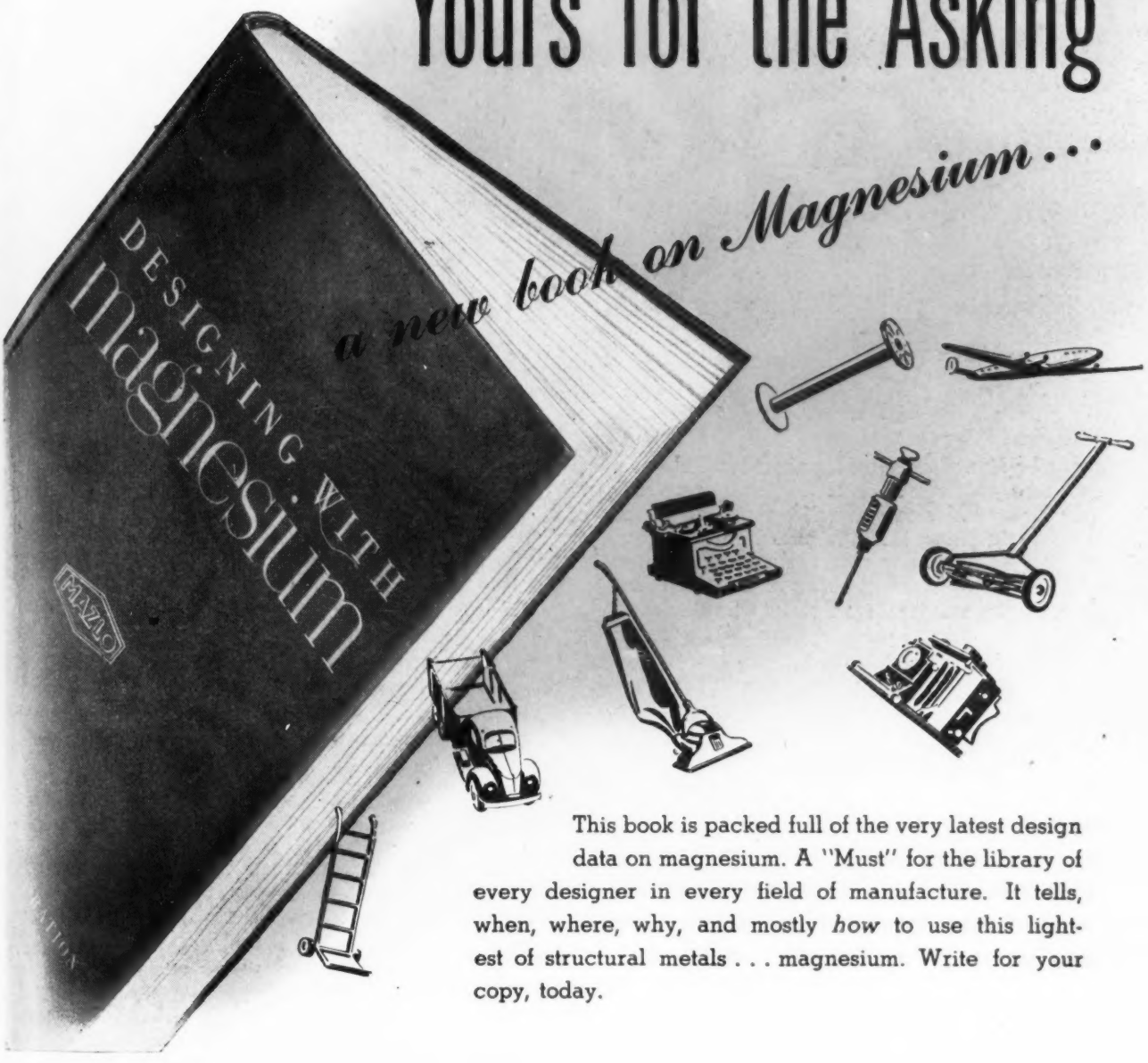
Yours for the Asking

a new book on Magnesium . . .



This book is packed full of the very latest design data on magnesium. A "Must" for the library of every designer in every field of manufacture. It tells, when, where, why, and mostly *how* to use this lightest of structural metals . . . magnesium. Write for your copy, today.

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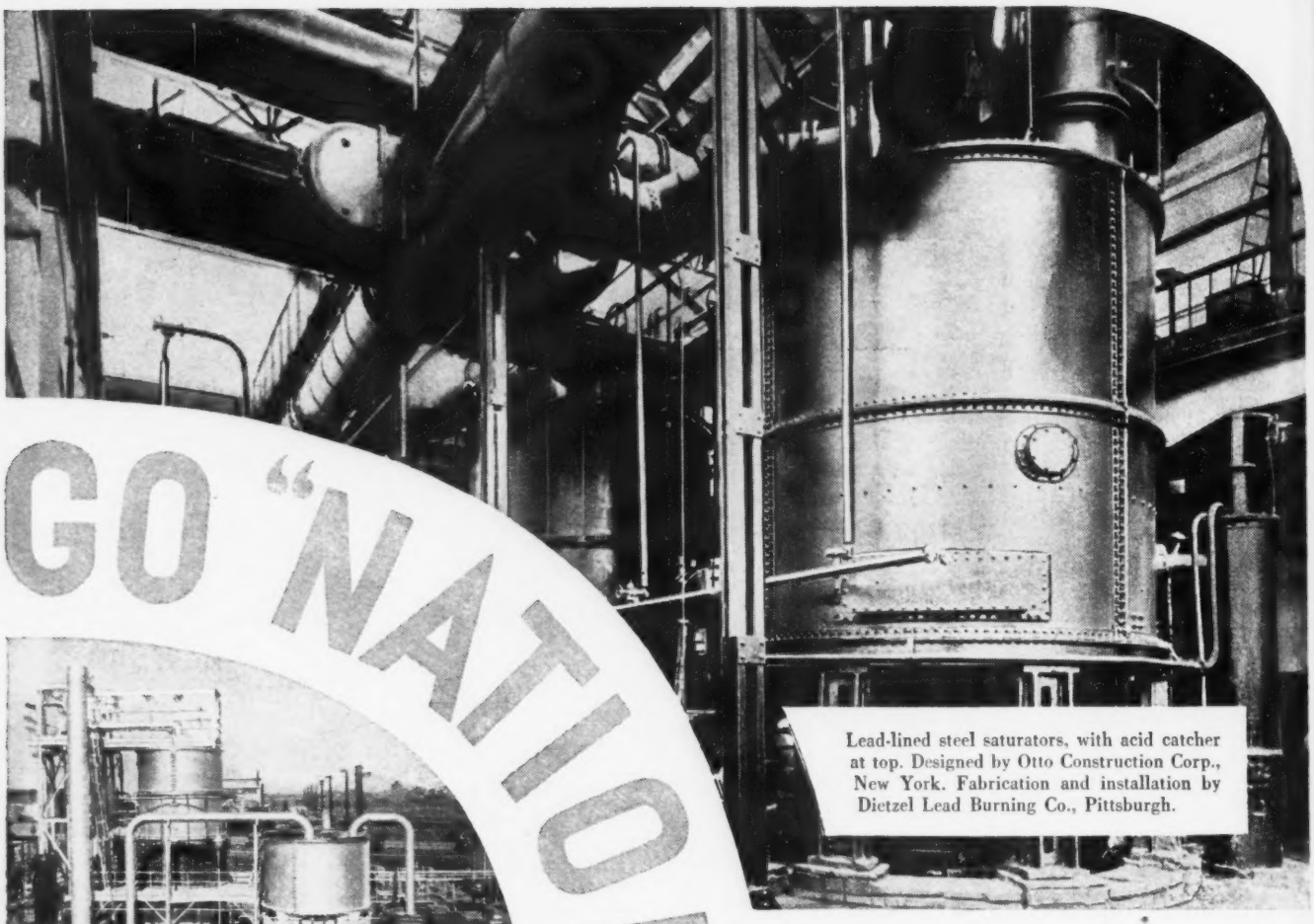
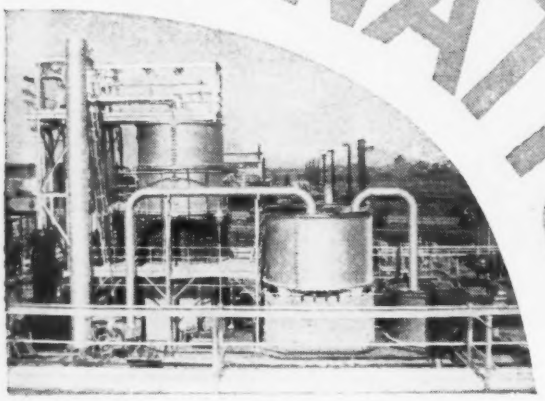


Lead-lined steel saturators, with acid catcher at top. Designed by Otto Construction Corp., New York. Fabrication and installation by Dietzel Lead Burning Co., Pittsburgh.

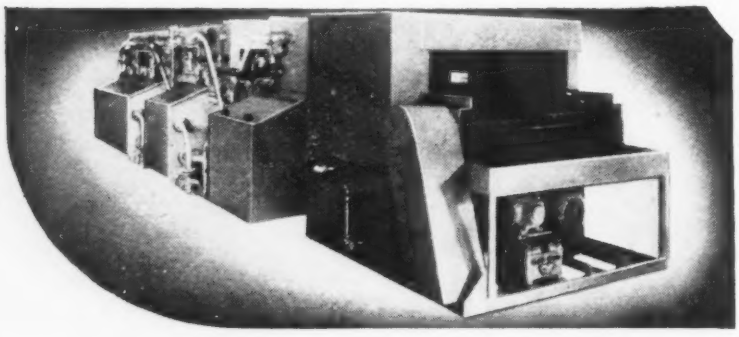
GO "NATIONAL" FOR LEAD



Simonson-Mantius acid recovery plant, including a super-vacuum concentrator and feed tank for concentrating spent acid. Designed and built by National Lead Company.

Battery of ten homogeneous lead-lined, vertical steel blow cases, ready for shipment from National Lead to a chemical plant.

Metal washing machine, lined with antimonial lead and fitted with pipe of same material. Equipped with header-type lead heating coils. All lead burning by American Lead Burning Co., Linden, N. J.



Wherever industry uses lead to control acid, there you'll find men in the know saying, *Go "National" for Lead.* For here at National Lead, are not only the *materials* but the *experience* to take care of any lead installation. For example:

(1) **Tellurium Lead was pioneered by us . . . to give extra corrosion resistance at elevated temperatures and longer life under vibratory stress.**

(2) **Another contribution is our wide variety of acid handling equipment, including lead-lined, lead-covered or all-lead valves, pipe and fittings.**

(3) **We also design, and fabricate to specification, special homogeneous lead-bonded apparatus, such as evaporators, autoclaves, pressure stills and agitators.**

(4) **Even complete sulfuric acid recovery plants are planned and built. These feature the patented Simonson-Mantius process, with its advantages of low temperature and high yield.**

(5) **And, of course, National Lead has long supplied sheet, pipe, coils, and fittings of chemical and antimonial lead.**

No matter what your needs...
Go "National" for Lead!

NATIONAL LEAD COMPANY
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Offices and Plants in Principal Cities and Canada

First Quality in Combed Yarns

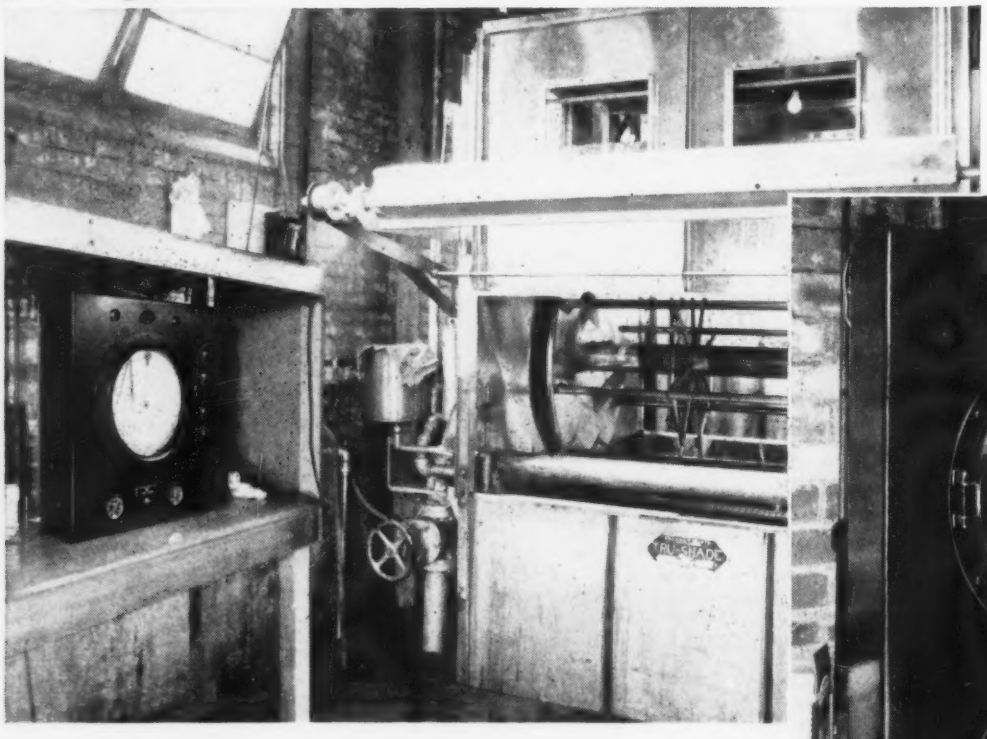
LIVELY SPINNA CALF

It's the Triple-Resilient Roll Covering

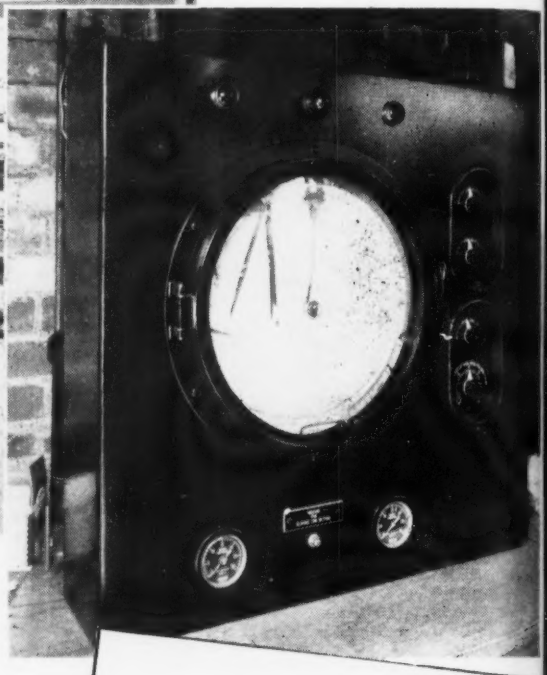
Mills whose reputations depend on quality insist that nothing takes the place of *leather* rolls for fine spinning . . . and no roller leather is as consistently high-quality as Lawrence's Spinna Calf . . . The "grain" side of calfskin has *natural* characteristics for drafting — unequalled by any other material. Spinna Calf has become, through the years, the most generally used calfskin. Results —in terms of yarn quality—must be the reason. *Specify* Lawrence Spinna Calf . . . A. C. Lawrence Leather Company, Peabody, Mass., manufacturers of Lawrence Calfskins—*1st choice for aprons.* Represented by H. H. Hersey, Greenville, S. C.

EVERY YEAR MORE PEOPLE DECIDE LEATHER IS BEST

Now-A BRAND NEW MEANING IN DYE KETTLE CONTROL



Foxboro ***CycleLog*** Controller on piece dye kettle at Woonsocket Falls Mill, Inc., Woonsocket, R. I. Five months' operation has shown consistently outstanding results.



CycleLog Controller adds new principle to give completely predetermined program control

At last you can take all the guesswork – and the headaches – out of color matching! With Foxboro's new ***CycleLog*** Controller you don't even have to guess the time needed to bring a kettle to the boil. You merely set the *rate of rise*, by a simple knob on the panel – and you do it without cams or extra instruments.

Here's how this radically improved new dye kettle controller works, in the words of D. Brophy, boss dyer of Woonsocket Falls Mill, Inc.; "Now we've got ***CycleLog*** Control, I just write the knob settings on the job ticket and then forget it. You always had to worry when you just had a certain length of time to bring the kettle to the boil, because the supply water was never the same twice, and the boils aren't always the same, either. Now we set the Controller to the rate we want it to come up, and that's the same thing summer or winter. You just turn the knob to any rate you want".

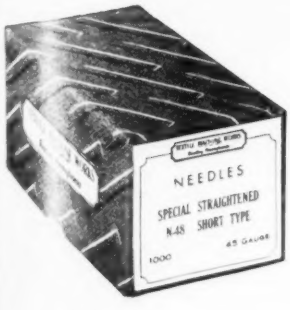
Full details of Foxboro's revolutionary new ***CycleLog*** Controller for any type of dye kettle will be sent on request. Write **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U.S.A.** Branches in principal cities.

FOXBORO *CycleLog* CONTROL

All you do is turn 4 knobs to desired settings. Then the instrument takes over, and automatically:

1. Raises temperature from the selected starting point to boiling point at specified rate-of-rise (in degrees per minute).
2. Holds boiling temperature constant within 1°F.
3. Accurately times holding period.
4. Shuts off steam and lights signal lamp at end of holding period.

FOXBORO REG. U. S. PAT. OFF. **AUTOMATIC DYE-VAT CONTROL**



News Event . . . Stockings that have sheer loveliness from clear, even texture are high in news value. Every full-fashioned stocking manufacturer knows that flawless fabrics depend on the quality of the needles. Keep your Knitting Machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

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ARMY E ★★★ ★★ NAVY

THE WAR DECORATIONS OF
TEXTILE MACHINE WORKS
Bur. of Ord. Flag and Navy "E"
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July 25, 1942
Three Star Army-Navy "E"
January 25, 1943
Four Star Army-Navy "E"
January 11, 1944
Five Star Army-Navy "E"
July 9, 1945

"He that will have a cake of the wheat must needs tarry the grinding."

SHAKESPEARE

Within the limits of material and manpower now available we are working on production of new high-precision READING Machines, designed to develop a new-high standard of quality and quantity production in the knitting of Full-Fashioned Stockings . . . Until such time as we can deliver these new machines to you, we will do our utmost to help you keep your present equipment at highest efficiency.

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BETTER GET WETSIT FOR INSTANT WETTING OUT

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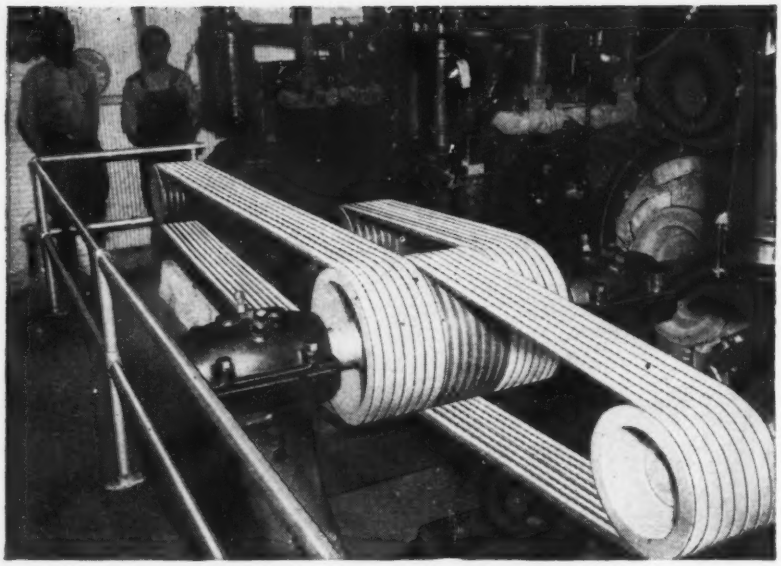

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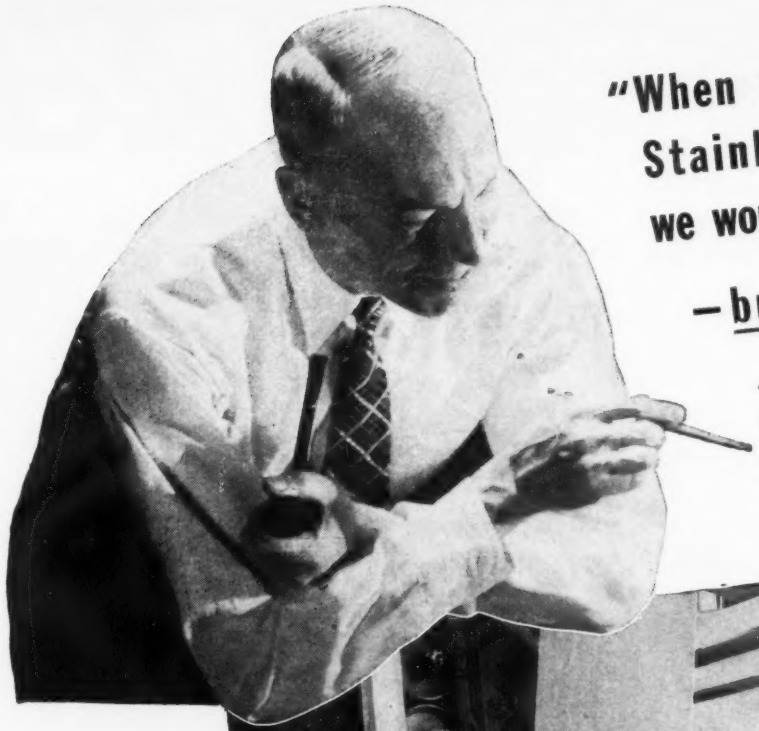

"When we first bought this Stainless Steel equipment we worried a bit about its cost

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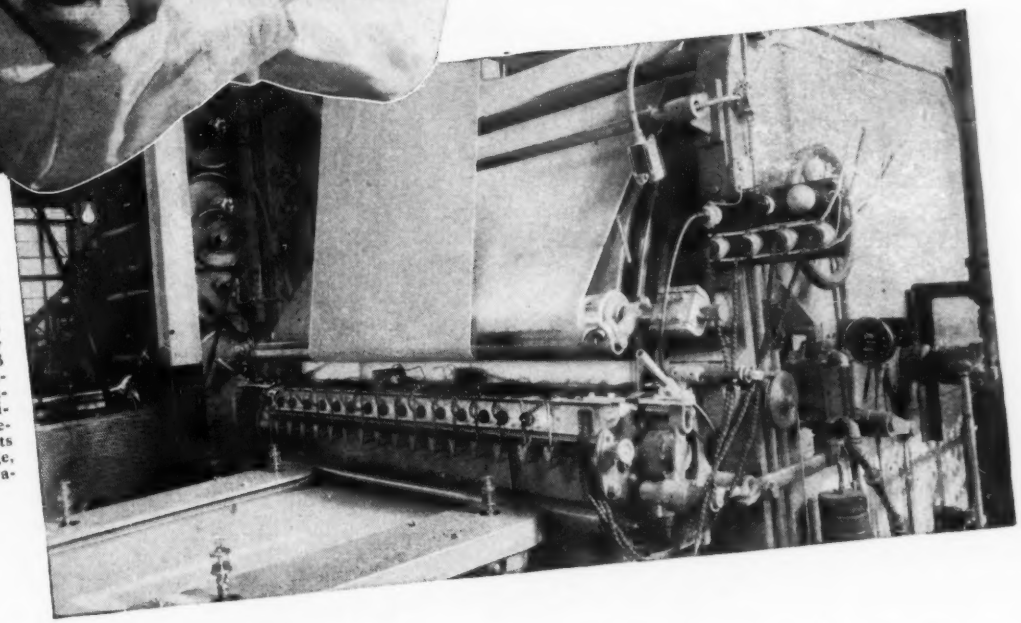
"Certainly, Stainless Steel costs more to buy. But it also costs a lot less to use. Why? Simply because it offers lasting, money-saving benefits that no other material can match."



Blankets lasted 10 times longer when U·S·S Stainless rolls were installed on this pre-shrinking machine. Also included are four 7-foot U·S·S Stainless dry cans which operate at 80.3 pounds steam pressure, superheated to 324°F. Stainless is ideal for these applications because it never becomes discolored, prevents cloth and blanket spoilage, withstands high temperatures and pressures.

USERS of dyeing, bleaching and finishing equipment built of Stainless Steel will be the first to tell you that Stainless more than pays for itself.

U·S·S Stainless Steel saves money in three ways. By reducing the time out for cleaning and maintenance. By producing a higher quality of finished product. By prolonging the life of equipment.

Because even the most stubborn pigments cannot get a "toe-hold" on the permanently smooth, dense surface of U·S·S Stainless Steel, dye tanks, kettles and kiers clean easily and quickly—color changes are more rapidly effected—there is no carry-over or bleeding to cause off-colors in the finished cloth. This not only means more production but it means close matching dye-lots, a faster selling product that commands better prices.

Because U·S·S Stainless Steel is unaffected by most dyeing and finishing agents—hot or cold, acid or alkali—because it is strong to resist hard knocks and has superior ability to withstand high heat and high pressure, its useful life is practically without limit. As the years go on, the measurable returns on the investment in stainless grow and grow.

When your equipment replacements are under consideration, plan to spend wisely for the future and specify "Made of U·S·S Stainless." Never forget, first cost is its last cost.

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UNITED STATES STEEL

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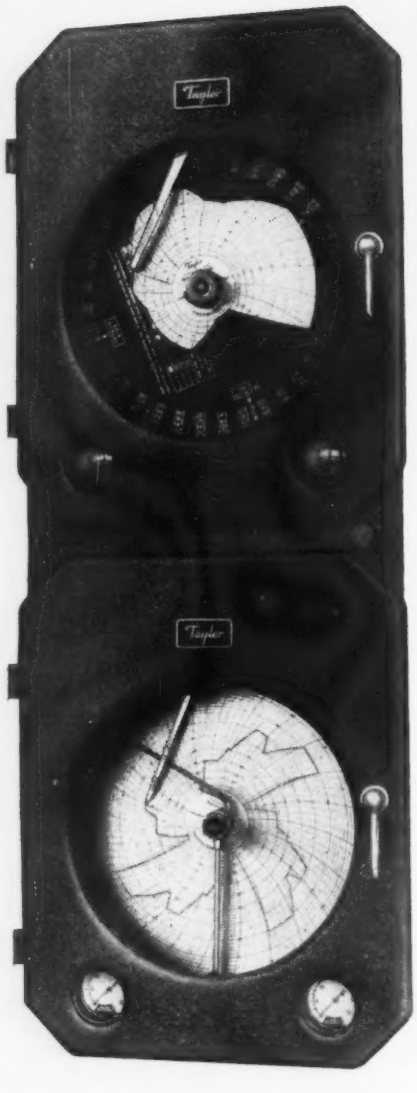
When you're cooking size with a Taylor Fulscope Time Schedule Controller, all *you* do is load the kettle and push the button!

What we do:



OUR Time Schedule Controller does *all* the rest of the job! Once your ideal cooking schedule is determined, the Controller not only follows it automatically but can make each succeeding batch *exactly the same*. Time and temperature are controlled so precisely that there can be no overflowing or overboiling.

This uniform cooked size results in better warps with maximum economy in materials and steam.

Your skilled operators have better things to do than watch your size cooking operation when Taylor can do the job automatically.

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Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

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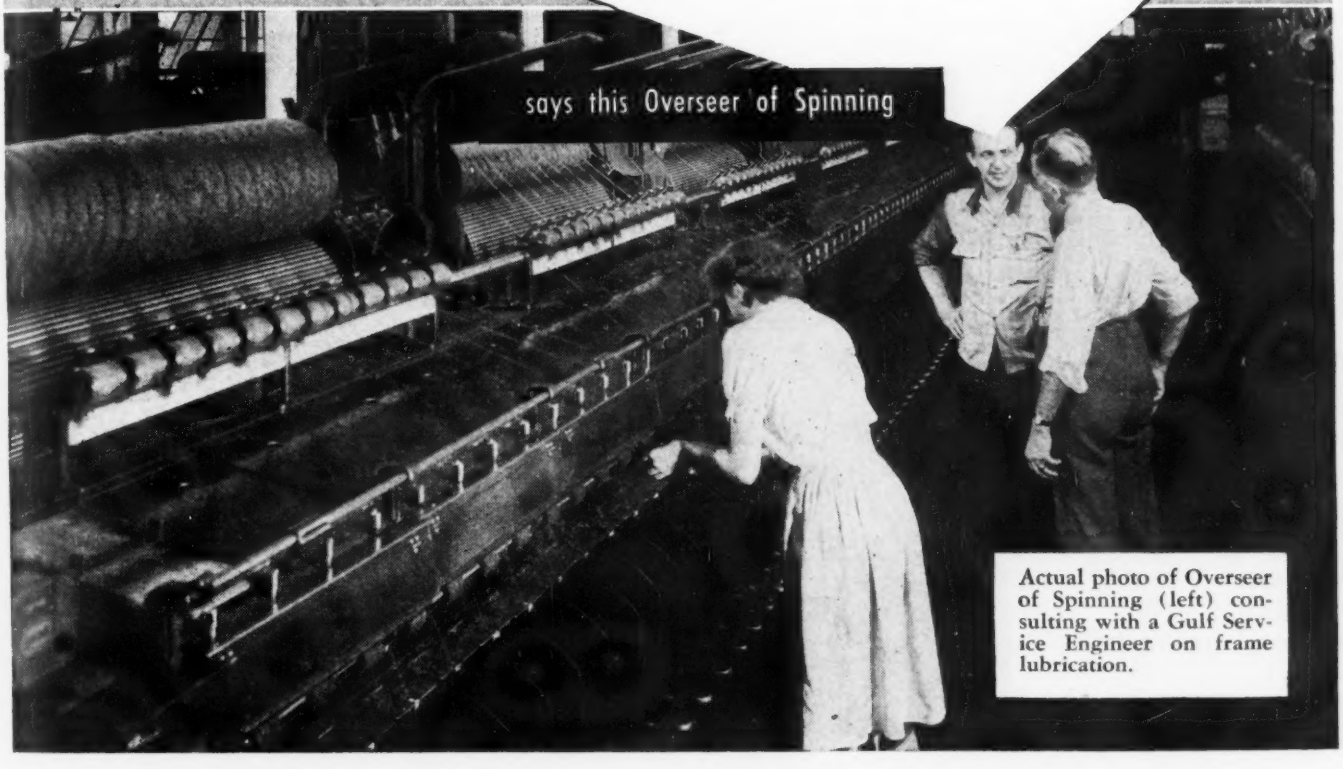
ACCURACY FIRST

IN HOME AND INDUSTRY

"With **Gulf Quality Lubricants** we eliminated gumming and increased traveler life 400%"

says this Overseer of Spinning



Actual photo of Overseer of Spinning (left) consulting with a Gulf Service Engineer on frame lubrication.

"THE GULF SERVICE ENGINEER gave us exactly the right recommendations for our spinning frames," says this Overseer. "With Gulf quality lubricants we not only get excellent lubrication under heavy load conditions, but we eliminated gumming and increased traveler life about 400 per cent."

Gulf quality lubricants do not accomplish such outstanding results in every case, but you can be sure of improved lubrication! For Gulf oils and greases have superior lubricating value and longer life—two assets that contribute to greater production and lower maintenance costs.

Call in a Gulf Service Engineer and ask him to recommend the right lubricant and its proper application for each bearing and moving part in your mill. You can rely upon his recommendations—they are based on broad experience with equipment similar to yours.

Gulf quality lubricants—and the helpful counsel of a Gulf Service Engineer—are quickly available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

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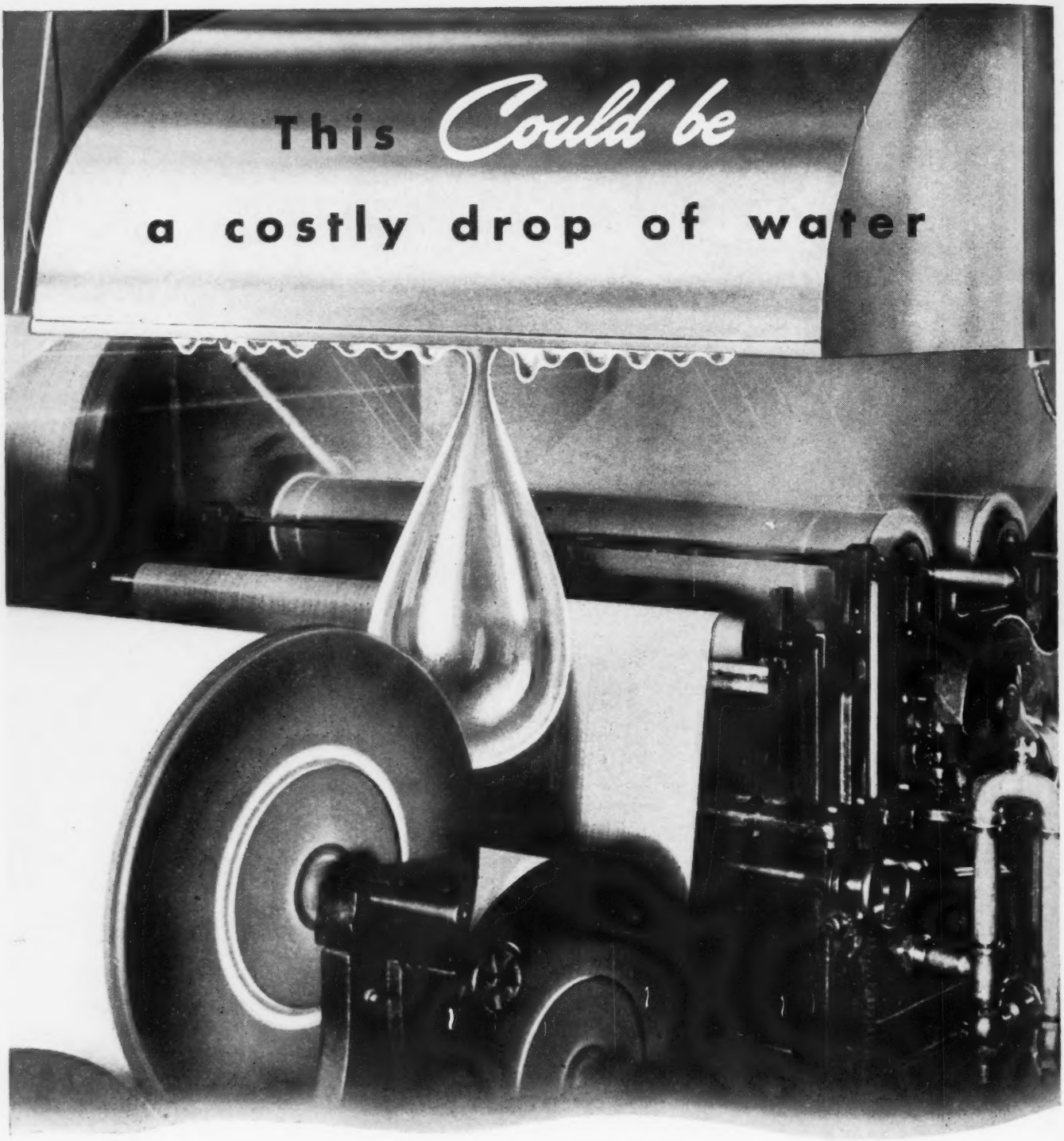

Could be . . . if that drop were laden with particles of rust. Your fabrics would get stained . . . your percentage of seconds increased. Alcoa Aluminum exhaust hoods and ventilating ducts give the needed protection. Condensation is not discolored by aluminum; drips cause no stains. Aluminum, highly resistant to corrosion, requires no protective paint to prolong its service life. The metal can be left bare and bright, adding to the appearance of an installation. Maintenance costs are extremely low.

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AGAIN you can get

N-100

Houghton's concentrated detergent – same pre-war quality

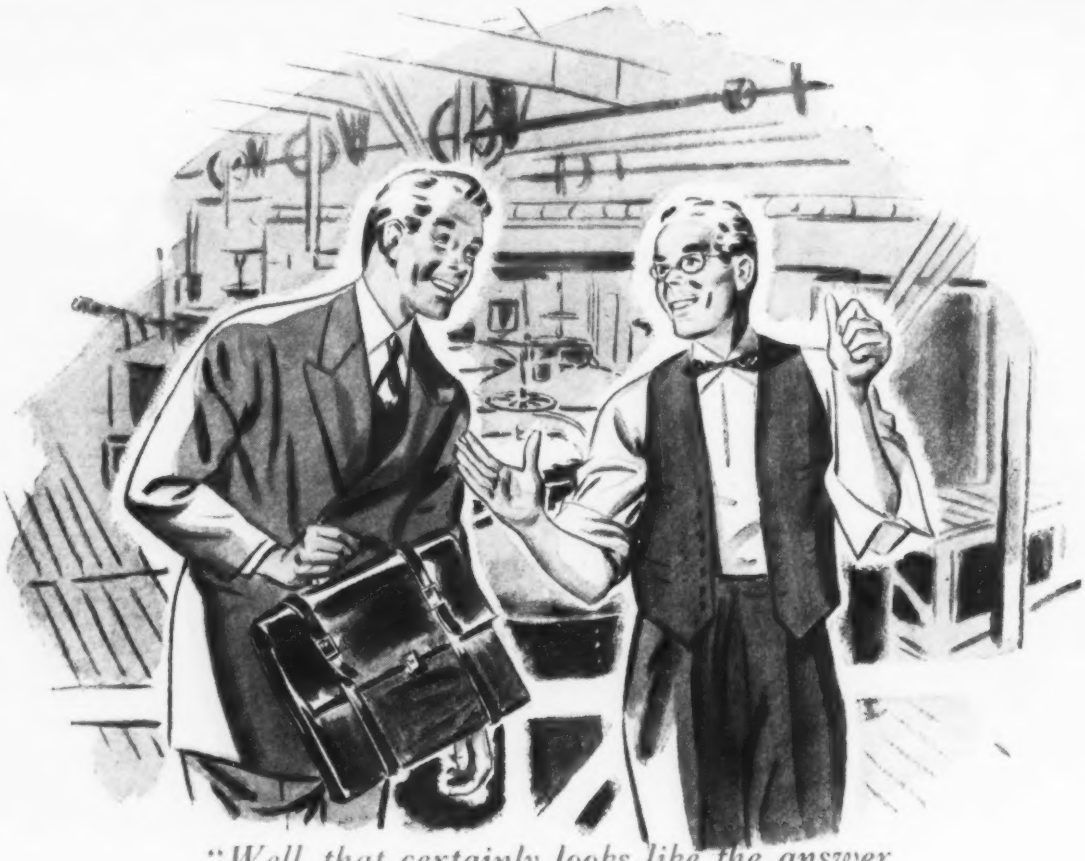
Detergents have been scarce since war needs restricted the supply of basic ingredients. But now the product which Houghton introduced so successfully some six years ago is again available to textile mills.

It is N-100, a concentrated synthetic detergent in liquid form, having a wide range of uses, and operating well in neutral, mild acid or alkaline solutions. N-100 will be found to perform outstandingly in kier boiling operations . . . for scouring rayon or cotton hosiery . . . as a penetrant or wetting agent . . . as a dye-bath assistant.

Its high concentration means economy. For prices write now. E. F. HOUGHTON & CO., Philadelphia or Charlotte.

HOUGHTON'S TEXTILE PROCESSING PRODUCTS

WARP SIZES . . . SOFTENERS . . . RAYON OILS . . . WETTING AGENTS . . . WOOL OILS



"Well, that certainly looks like the answer to real production . . ."

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Fine Chemicals For Fine Quality Textiles

MILL men often find that calling in a Rohm and Haas representative is a good way to iron out operating difficulties.

Take kier boiling, for example. Many mills have found in TRITON 770 — recommended by Rohm and Haas textile specialists — a means of improving the efficiency of the process.

TRITON 770 is *more* than an efficient surface active material. It suspends impurities in the caustic so they are not redeposited on the fabric . . . and, being very free rinsing, speeds up the draining of the kiers.

Effectiveness in low concentrations and in hard water are other characteristics of interest to mill men.

Let us know if you would like one of our men to call and tell you more about how you can get better results from kier boiling by using . . .

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CONTROLLED ATOMS or CONTROLLED LIVES

SINCE August 6th when the first atomic bomb was released over Hiroshima, the American people have been subjected to a continuous barrage of pronouncements on the use and control of atomic energy. Some of this comment has been strident, and much of it conflicting. A considerable portion of it has been of sincere and constructive excellence.

It has not been easy to separate the wise counsel from the merely noisy, and it is small wonder that the minds of many are troubled and confused.

However, the sheer mass of discussion poured into press and microphone has awakened us all to the gravity of the issue. In terms of any problem on which Americans ever have been called to exercise a judgment—This is It!

Even the dullest now recognizes that atomic weapons hang over modern civilization like the Sword of Damocles, and understands in some measure how fragile and taut is the hair of political balance that holds it suspended.

From this point on, we need the coolest and most carefully considered judgment that can be brought to bear. Discussion highly charged with emotionalism will but increase the tensions both at home and abroad, and render wholly insoluble a delicately intricate problem.

What Is The Problem?

The major outlines of that problem now are coming into focus in understandable terms:

1. The scientists have opened up a new and virtually unlimited storehouse of energy, and the engineers have discovered how to turn it into a military explosive incomparably more powerful than any we have known. We know that this energy may also be used to produce heat for useful power, and we suspect that the radioactive substances produced by the process in hitherto unimagined quantity may also have medical, industrial, and other constructive applications.

2. Terrifying as have been the demonstrations of the atomic bomb thus far, we know that they are as nothing in comparison with its potential destructiveness. The explosive force of individual bombs can be increased tremendously, and means for their effective delivery to predetermined targets in wholesale quantity already are at hand. The experts tell us that no practicable means of interception can be devised, and that reprisal in kind probably will be the only answer to an enemy attack with atomic weapons.

3. So far as we can see now, even successful retaliation would be at best an answer of hollow effect. Any two nations each having wholesale stock-piles of bombs could accomplish the practical destruction of each other. Since a first treacherous blow might well constitute an enormous advantage, a nation actuated by a ruthless urge to conquest or revenge might have the best chance of survival. But since the widest possible dispersal of bombs and launching units would be dictated by the strategy of atomic weapons, it is doubtful that one nation could destroy another without itself suffering destruction. On both sides the major centers of population could be wiped out, and the nation of least concentrated industrialization and commerce would suffer least. However, no one can be sure that the concentrated explosion of as many as 20 thousand atomic bombs would not poison the atmosphere of the world to an extent that would be fatal to great masses of population, not only within the country bombarded, but perhaps in the country which launched them.

4. The problem is further complicated because, so far as we know now, any large-scale commercial use of atomic energy as a power source is more or less inextricably linked to a potential military use. It is true that, if atomic power becomes economically feasible (which is by no means certain for a long time to come), it would require only low-grade concentrates of fissionable material, which would need further elaborate and costly processing before reaching explosive potential. But the process of producing such low-grade concentrates constitutes perhaps two-thirds of the industrial effort required to make effective bombs. It follows, then, that if nations were to equip themselves to produce large quantities of low-grade concentrates for power generation, the effort required to develop large-scale bomb production would be materially reduced. Moreover, the maintenance of an effective inspection to police agreements not to produce bombs might be forbiddingly difficult if atomic power generation were allowed.

5. In addition to the major problem posed by the use of atomic bombs in international war, any nation which produces or possesses such bombs, or the fissionable materials with which they are loaded, faces still another in the danger of their falling under the control of paranoid elements in its own population.

What Are We Going To Do About It?

We face the hard fact that we have produced a weapon capable of destroying whole nations—perhaps even the whole world. Although we were importantly aided in its development by the nationals of other countries, we, together with Great Britain and Canada, now must take the initiative in deciding what shall be done with it. We have only two choices. We can try to keep this weapon as a monopoly of our own, or we can try to place it under broad international control.

Can We Keep It To Ourselves?

If we know one certain fact about the atomic bomb, it is that it cannot long be held as a monopoly of those nations which produced it.

If Nazi Germany had succeeded in developing the weapon first, it probably would have attempted to achieve world dominion, with utter destruction as an alternative. Such a course is not within our range of choice. It violates every principle for which we stand.

Much reckless nonsense has been uttered concerning the inability of other nations to master the scientific, engineering, and industrial problems involved. It is the virtually unanimous opinion of those who worked on the project that several nations today are fully equipped in science, engineering, and industrial organization to produce atomic bombs and to provide the means for launching them. At least one of these nations, Russia, has also access to an ample supply of the necessary raw materials. The only debate is over whether it would take three, or five, or ten years for her to marshal her resources to produce bombs in multiple thousands. Once such an atomic race were on, we have no reason to believe that Russia might not divert more resources to the task than we ourselves should be willing to put into it.

Additional nonsense is talked as to how we might attempt to cope with the problem of living in a world in which mutually suspicious or hostile nations faced each other, with stores of atomic weapons on both sides. We hear talk of dispersing our cities and even of moving underground. No one has seriously reckoned the difficulty or the cost of following such counsel of despair. Still less has anyone appraised the neurotic effect upon men's minds of living by any such preposterous formula, under continuously mounting tension day after day, and year after year.

Certainly, if we could find no way to prevent the competitive production of atomic weapons, we should be driven at least to the selective dispersion of our bomb-launching facilities, of certain key industrial establishments, and of our centers of government and governing personnel. We should be forced, also, to change our traditional requirement that only Congress can commit us to active war. We should be forced to organize ourselves as a police or military state, with our scientists regimented and muzzled, with all of us under constant surveillance against the smuggling and planting of time-bombs, and constantly alerted against attack through the air.

Before we commit ourselves to any such intolerable procedure, we should be mad not to explore all possible means for making it unnecessary.

The Only Feasible Alternative Is Effective International Control

This cardinal principle has been recognized in the statement of November 15th, issued jointly by President Truman, and Prime Ministers Attlee and King. Their statement frankly concedes that against atomic weapons there can be no adequate military defense, that no nation can command a monopoly of such weapons, that responsibility for eliminating atomic energy as an instrument of war and for devising safeguards over its use for the advancement of science and other peaceful and humanitarian ends rests upon the civilized nations of the world.

They propose that a commission be set up at once under the United Nations Organization to make recommendations: (a) for extending between all nations the exchange of basic scientific information for peaceful ends, (b) for control of atomic energy to the extent necessary to ensure its use only for peaceful purposes, (c) for the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction, and (d) for effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions.

Already criticism is leveled at the wording of the statement, at alleged omissions, at the wisdom of choosing the United Nations Organization as the medium through which to seek agreement in view of the weaknesses of the UNO Charter.

None of these issues should be crucially important. What matters is that an invitation has been issued in good faith for the nations of the world to meet and decide upon means for assuring the elimination of weapons, the existence of which no one can afford to tolerate.

The decision cannot be other than international; it will require the best thought of the best brains the world can muster. The smaller nations have an equal stake with the large, and from them may well come the most fruitful suggestions. But Russia now holds the key to the success or failure of our proposal. If she accepts our invitation, no other nation will refuse.

Alternatively, there will be an international armament race paced by atomic weapons. It will mean an end of free science, a severe policing and regimentation of international travel and trade, and innumerable restrictions upon those individual freedoms which we have just fought so desperately to preserve. This is the dismal prospect if we fail to arrive at a genuinely international accord on the control of atomic energy. But even this interval would promise to last only for an uneasy period, until someone started pressing the push-buttons on the panel-boards of extinction.

The only permanent solution lies in finding means to eliminate war itself. That we cannot hope to achieve overnight, but we can, and do hope that the nations will now agree to eliminate atomic weapons and their radioactive by-products as instruments of war.

If they do that, we can move forward more surely to the constructive development of the incalculably valuable resources that science has newly opened to our use. And, we can hope also for a progressive improvement in international understanding.

Unless the nations can reach agreement on this paramount issue of atomic energy, it is difficult to conceive of any vital issue on which they might agree.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Co., Inc.

THIS IS THE 42ND OF A SERIES

December, 1945 **TEXTILE WORLD** Volume 95, Number 12

RAMIE—

Has Tantalized Textile Men for One Hundred Years

HIGHLIGHTS: *Ramie, problem child of the fiber family, introduced from Orient into Europe in 1845—Orientals, by slow, hand processes of preparation, have made some good use of ramie, but machine processes have never established themselves—Some experimenters find inherent weaknesses in the fiber; others find it a fruitful basis for promotion—Many facts are available on growth, preparation, properties, and uses—Long roster of enterprises based on ramie with few showing any degree of permanence.*

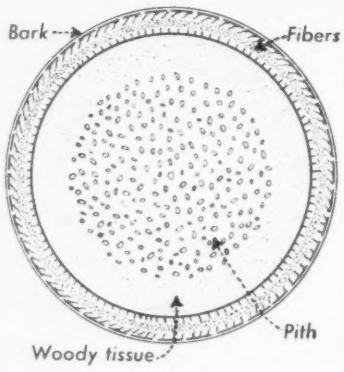
By WILLIAM B. DALL, *Managing Editor, TEXTILE WORLD*

URTICA NIVEA is the exotic name under which botanical science specifies the fiber-bearing plant which is better known to the textile industry by two syllables of dubious association—RAMIE. Actually several varieties of the plant are grouped under the latter name, but Urtica Nivea (sometimes called Boehmeria Nivea) with a white under-leaf, is the most important and Urtica Utilis (Boehmeria Tenacissma, sometimes called Rhea), with a green underleaf, is less hardy and rarely cultivated outside of India, China, and Formosa.

The year 1945 marks the hundredth anniversary of the introduction of ramie into Europe after several thousand years of use in the Orient. It is also the ninetieth anniversary of the first American experiments with this plant. Unlike the story of most fibers, these 100 years reflect a virtual zero in progress, but their lesson is instructive and their history dramatic.

In the great family of fibers, ramie belongs to the bast-fiber group, which

★ AN IMPARTIAL REPORT ON A SUBJECT WHICH IS CONSTANTLY CROPPING UP ★



A

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Ramie in several stages: (A) Schematic diagram of cross section of stalk showing location of fibers. (B) Decorticated ramie, the so-called "China grass" stage. (C) Degummed ramie; (D) Ramie fiber after opening.

of course includes such serviceable items as flax, hemp, and sisal and a great many others which have no common textile recognition at all. These bast fibers usually lie under the bark of plant stalks and must be extracted by a decorticating process and cleansed by a degumming process.

For commercial applications the extraction of the fiber must be sound economically and adequate technically so that a practical and useful fiber results. A good laboratory can extract from numerous plants fiber which looks attractive on the table and feels kind and lofty in the hand but which is never seriously discussed as a commercial possibility, let alone as a competitor of the big three—cotton, synthetics, and wool, or even of such lesser fibers as silk.

But with ramie the program has been different. The laboratory and the experimenter have done their work, the beautiful white and lustrous fiber has been prepared; but the chain of events has not stopped there. Literally hundreds of ramie enterprises have sprung up during the brief century that this fiber has been known outside of the Far East, but without exception no recognized commercial success remains from these earlier efforts nor has suggestion of permanence been achieved.

JOB HAS BEEN DONE BY HAND. Probably the program has been different because for centuries the Chinese, working through the slow processes of nature and with few tools outside of their ten fingers, have produced beautiful textiles from this fiber, and because the fiber itself when carefully prepared has unusual appeal to the eye and the hand. The production of fine, linen-like materials in China and India and Japan from ramie has been a challenge. The fact that beautiful fabrics can be obtained by careful, hand-controlled processing has given exceptional opportunities to the promoter. Still further, recognition of test data, which have placed this fiber at the top of all natural fibers on the score of tensile strength and its unique property of being even stronger wet than dry have intrigued the scientist and aided the promoter.

That work on ramie in Europe and America is by no means a novel thing is indicated by the numerous reports and patents dated prior to 1900. For example out of a total of 16 references in the card file of the Congressional Library, Washington, D. C., 9 are dated earlier than 1900; out of the 68 abstracts listed in Carter and Horton's booklet "Ramie", 30 are earlier than 1900.

There have been current during the last ten decades at least five general types of approach to ramie, which may be briefed as follows:

1. That of the abstract scientist, who talks in terms of fiber characteristics, avoids the dogmatic attitude that the fiber is "good" or "bad", is unwilling to say that anything is impossible; therefore believes that research may some day place ramie among the generally usable fibers.

2. That of the conscientious promoter, who has done promising things with the fiber in preparing it and in spinning, weaving, and knitting it, who knows that it has its limitations, but who has confidence in the performance he himself has experienced. If costs are momentarily out of line, he sees ultimate volume as the cure-all.

3. That of the realist, who is conscious of the long line of failures and frauds in ramie's history, whose experience tells him that ramie is a wirey, brittle fiber, who is skeptical of broad development but who recognizes a very few limited uses and wonders why it has never been adequately developed in these fields.

4. That of the coldly business-like investment counsellor, who considers only the past failures and who judges any new proposition with the question "What has this new project got that all those previous failures lacked?"

5. That of the unscrupulous promoter, who finds in ramie's pureness of color, high tensile strength, beauty of appearance, and apparent ease of agricultural production, fine material for an alluring story, and who, arguing with selected half-truths, would have it believed that this fiber possesses all material virtues as well as high margins of profit to its handlers.

VIEW DEPENDS ON ANGLE. These five viewpoints suggest the story of the three blind men who decided to find out what an elephant was like. You will remember that the blind man who felt the elephant's leg believed him to be cylindrical like a tree; the one who felt only the elephant's side said any one could see that he was broad and flat like a barn door; the third who grasped the elephant's trunk argued that he was long, round, and flexible like a snake.

Ramie has suffered, like the elephant, from half-truths. It seems fitting that on its hundredth birthday a survey of the record should be made. For convenience, we divide this survey into four sections: 1. Agricultural phases; 2. Extraction methods; 3. The resulting fiber; 4. A roster of the men and firm's who have worked with ramie since 1900.

Growing the Ramie Plant Is Not Too Difficult

RAMIE is not difficult to grow. An experimental plot has been grown as far north as Boston, but it does best in a sub-tropical climate where frost is rare.

The plant itself is a single stalk which carries large heart-shaped leaves, with fiber between the bark and pith in the stalk, which is about ¾ in. in diameter at the base when cut. The fiber is figured by most authorities as about 5% of the gross green weight of the plant. Dense plantings are possible on rich soil. Although seeds, cuttings, or roots may be planted, the last named is the accepted method and as many as 4,000 to 6,000 roots per acre may be set out in rows. The plant is a perennial and a persistent grower. Frequent cuttings are said to improve the output. About four cuttings per year are a generally accepted normal. A planting lasts from five to seven years or more.

YIELD PER ACRE. One writer says the yield is about 27 tons of green ramie plants per acre per year. Another source says 45 tons has been harvested. Obviously such productivity means land depletion, and fertilization must be frequent. For economy's sake, the unused portions of the plant, the green and pulpy parts, are usually returned to the soil.

Harvesting may be by hand with a machete or by mowing machine. Hand work is said to be preferred. Since all stalks are not of the same maturity, and since a fair uniformity in maturity is desirable, some degree of selection should be exercised. Leaves are usually stripped on the spot and the tops of the stalks cut off.

The literature on the subject reports widely-spread figures on cost of the crop to the farmer. Carter and Horton, in their booklet "Ramie," published by Louisiana State University in 1936, give the figures from planting through harvesting as $27.50 per acre for the first year and $12.00 for succeeding years. A. C. Whitford, writing of the Florida projects, names $81.00 per acre for the first year and $49.50 for succeeding years. Although the volume of fiber output of the two projects involved in these figures differed greatly in favor of the Florida plantings, the farmer's cost per pound of fiber output did not differ as much as might appear, being given as 4¢ for the Louisiana planting and 3.3¢ for Florida. Cost of production of ramie in China (the principal source of imported material) is said to be $41.18 per acre in equivalent U. S. currency.

An article in the *Chemurgic Digest* for April 30, 1945, gives cost in the Everglades area of Florida, which it describes as the lowest-cost area, as $90.50 per acre for the first year and $36.00 for succeeding years. This cost calculation assumes an annual output of 1,200 lb. of fiber per acre, which figures out to an average cost to the farmer over a five-year period of about 4¢ per pound of fiber.

At the moment, the most active ramie-growing projects are concentrated in Florida, though there are plantations in Texas, California, Cuba, and Haiti. Dr. Julian Acuna, head of the department of botany at the Cuban Agricultural Experiment Station, Santiago de las Vagas, has collected 16 varieties of the genus Boehmeria of the family Urtica, to determine the best variety for Cuba. Some authorities believe that intensive plant breeding will be necessary if a satisfactory fiber is to be made available.

Clearly, unless fiber extraction is economical and the resulting fiber has recognized commercial use and therefore a ready market, it is useless for the farmer to raise great quantities of it, no matter how successfully the plant grows and no matter what high tonnage per acre may be harvested.

Preparation of the Fiber Varies With Each Experimenter

EXTRACTION of the ramie fiber from the plant involves at least two steps—(1) decortication (or the separation of the fiber-bearing layer from the rest of the stalk, usually in the form of long, narrow ribbons), and (2) degumming (or the removal of the gums, pectins, and waxes which surround the fibers, plus any adhering bark or other vegetable matter). Several writers list a third process—bleaching and softening.

DECORTICATION. For decortication there are a multitude of chemical and mechanical methods and patents. American interest goes back to 1855 when Dr. George C. Schaeffer, then librarian of the U. S. Patent Office, imported ramie plants from Java, successfully grew them in the Botanical Gardens at Washington, and extracted fiber from them. The Chinese method of decortication is a hand-stripping of the fiber ribbons from the stalk and a hand-scraping of these ribbons to remove as much adhering vegetable matter as possible. The individual worker is said to produce 8 lb. of cleaned ribbons a day. These fiber ribbons are then dried and baled for shipment. The product in that form is called "China grass."

It is this hand operation which inventors of decorticating devices would duplicate or improve upon by mechanical means. The work is usually achieved by an arrangement of rollers and/or beaters which break up the stalk and cast off the unwanted bark and pith. One inventor froze the material before treatment to facilitate the separation. In some processes treatment is delayed until the stalks are dried. Most favored practice at present, however, is to decorticate the green stalks in or near the field so that the waste may be returned easily to the land for fertilization and so that hauling costs on unwanted material may be avoided. Users of a modern decorticator claim a production of 12,000 lb. of squeezed dry stalks per 8-hour operation at cost of 1.7¢ per lb. The *Chemurgic Digest* cites a decortication cost of $14.25 per acre on the assumed output of 400 lb. of fiber in one cutting. This figures out to 3½¢ per lb.

Hand stripping and scraping was

Fiber Properties Compared

(From Matthews "Textile Fibers")

	Ramie	Hemp	Flax	Cotton	Silk
Tensile Strength	100	36	25	12	13
Elasticity	100	75	66	100	400
Torsional Strength	100	95	80	400	600

(From "Journal of the Textile Institute," May, 1945)

	Strength in grams per denier	Breaking extension in percentage
Ramie	6.7 gr.	3.74%
Flax	6.1	3.01
Nylon	5.3	26.30
Jap Silk	4.4	23.40
Jute	3.5	1.80
Cotton*	2.8	7.16
Wool	1.4	42.70

Above figures are averages of 50 tests at 65% r.h., 20°C.; rate of loading, 10 gm. per den. per min. Ramie prepared by Sabner process of degumming (E.P. 533922 and 533949). From study by Reginald Meredith of British Cotton Industry Research Association.

*Texas and Uplands.

tried in Louisiana with a resulting cost of 14 to 19¢ per lb. of pure fiber or 8 to 11¢ per lb. of "China grass".

Some experimenters have found that the chief difficulties of decortication are the imperfect removal of vegetable matter when the stalk is treated green, and the damage to the fiber itself plus considerable waste when the stalk is treated dry. One of the most successful methods of separation involved putting dry stalks through a hammer mill followed by use of a bran separator, but the resulting fiber was so seriously damaged as to discourage hope for its use in spun yarn.

Several possible methods of decortication remain to be tried on a commercial scale. One involves subjection of green stalks to steam and high pressure in an autoclave with a sudden pressure drop being used to explode the stalks and thus free the fiber. Another is the application of high-frequency mechanical oscillation to effect separation by vibration.

Carter and Horton, mentioned previously, in referring to mechanical decorticator say, "No case is recorded where one of these machines has been able to operate successfully on a commercial scale."

Retting, as applied to flax, has been tried on ramie without any reported commercial success. Also, controlled chemical and bacterial means have been tried for decortication without as much achievement as has been gained by mechanical means.

Degummed and decorticated ramie. This and picture on cover were taken on plantation of Newport Industries, Inc.

DEGUMMING. Degumming, the next important step after decortication, to be successful must be done without loss of strength or luster to the fiber. Both acid and alkaline treatments appear in patent literature. The variety of chemicals, temperatures, and lengths of immersion is immense. Use of caustic soda at the boiling point is typical. Soaps for washing and oils for cleansing and softening are also applied. Use of ammonium hydroxide and sodium sulphite is described as successful but expensive. Another method uses fluorides, sulphides, and carbonates. Another inventor has devised a method of generating gas on the surface of the fibers which disintegrates the adhering gums. Attempts at bacterial action, or retting, have not been successful.

The stated difficulty in degumming is that most chemicals which attack the gums also attack the fiber. One experimenter would control pH, temperature, and time to such a nicety that the gums would be dissolved but the fibers would be untouched. Another states that speed is essential to prevent fiber damage.

Carter and Horton estimate cost of degumming and purifying based on a daily production of 9,500 lb. as 18¢ per lb. of pure fiber. The Manawul process, which uses what are described as "benign" chemicals, leaving the fiber soft and flexible, is said to cost

These Men and Firms Have Worked with Ramie

It is doubtful whether any other commodity or product has so high a ratio of failures among those who have sought to utilize it as has ramie. Through the cooperation of a previous investigator and our own search of periodical files, we offer the accompanying list of ramie enterprises. Though some small success may have remained hidden from us, we believe that, of all the 65 enterprises in the United States of which we have record, only those of most recent origin are still in business. The mortality record is such as to make one authority remark, "Unless some wholly new element enters into the picture, such as a definitely new process or a new use, the odds are decidedly against the success of any ramie project."

The roster of firms and individuals who have handled, processed, or promoted ramie follows:

1901.—Eyssen-Packer Defilbrator Co., New York; Willard N. Packer, Cleveland, inventor; W. C. Belding, Jersey City, engineer. Decorticating machine.

1900–3.—Galveston Fiber Co., Galveston, Texas. Allison Decorticating machine.

1902.—E. W. Perry, 141 Broadway, New York. Combined process.

1902.—John Henry Piper, Newburyport, Mass. Degumming process.

1903.—Charleston Fiber Co., Charleston, S. C. Decorticating process.

1903.—Benjamin F. Parke, 12 Mount Vernon St., Providence, R. I. Complete process.

1903.—Robert C. Schupphaus, 174 Broadway, New York. Decorticating process.

1904.—L. Perlen, 228 West 123rd St., New York. Complete process.

1904.—R. Maxwell Bleakie, 122 West 43rd St., New York. Combined cottonizing process.

1904.—Josiah Quincy, 70 State St., Boston, Mass. Chemical degumming process.

1904.—C. Maxwell, 2018 Bellevue St., Tioga, Philadelphia, Pa. Complete process.

1904.—Gustav Roeder, Paterson, N. J. Chemical degumming process.

1905–1923.—George William Schlicten, New York, N. Y., Lexington, Ky., San Francisco, Bakersfield, Brawley, San Diego, and Davis, Calif. Decorticating machines and degumming processes. Operated 50 knitting machines on ramie underwear and hosiery in New York in 1910-11; later in California.

1905.—Felix Fremery, Portland, Ore. Decorticating process.

1905.—Joseph Stone, 53 State St., Exchange Building, Boston, Mass. Complete process.

1905.—Dr. J. H. Stolper, Oklahoma City, Okla. Complete process.

1906.—J. E. Hammeick, Ola, Ark. Chemical process.

1906.—W. E. DeLong, Morrilton, Ark. Combined cottonizing process.

1906.—G. R. DeMontlord, Morristown, N. J. Combined process.

1906.—Universal Fiber Co. (American Brake & Fiber Co.), 184 LaSalle St., Chicago. Decorticating process. Shely brake.

1906.—Charles C. Rossire, 80 Greene St., New York. Complete process.

1907.—Howard-Ramie Fiber Mfg. Co., 19 Park Pl., New York. Combined process.

1907.—F. X. Govers, Owego, N. Y. Degumming.

1908.—E. Kingsland Sargent, Jr., 112 Arch St., Philadelphia. Decorticating and degumming.

1909.—Stewart F. Carter, 315 Olney St., Providence, R. I. Degumming process.

1910.—George E. Armstrong, 50 Church St., New York. Decorticating machine.

1910.—J. Spencer Turner Co., 86 Worth St., New York. Degumming process.

1910.—American Flax Fiber Co., Wharton and Bloomfield, N. J. E. Kingsland Sargent, Jr., president. United Kingsland Sargent process of fiber preparation.

1911.—Sacramento Ramie Mfg. Co., Sacramento, Calif. (H. H. Howard). Degumming process.

1912.—American Ramie Mfg. Co., Laurel, Md. Degumming, combing, and spinning.

1913.—United States Ramie Co., 45 Kearney St., San Francisco, Calif. Degumming and bleaching.

1914.—China-America Ramie Co., Compton, Calif. (M. L. Abbott). Degumming process.

1919.—Joseph C. Hirst, Vineland, N. J. Degumming process.

1920.—Seattle Ramie Textile Corp., 607 Lowman Bldg., Seattle, Wash. Degumming process. W. T. Coleman, president; capital $2,500,000.

1921.—California Fiber Co., 1065 Phelan Bldg., San Francisco, Calif. Degumming process.

5½¢ per lb. of finished fiber. *Chemurgic Digest* states that degumming should cost about 2½¢ per lb.

The *Industrial Bulletin* of Arthur D. Little, Inc., in 1932 said, "The chief technical difficulties which have interfered with the establishment of a large ramie industry in the United States are in the degumming of the fiber and the subsequent manufacture."

Experimenters are hopeful that degumming while the fiber is still green may have advantages over degumming after the gums have been thoroughly dried and caked. An alleged difficulty with imported China grass is that degumming must be so harsh a process to remove the thoroughly-set gums that the resulting fiber is damaged. Carter and Horton say that to compete with imported China grass, domestic dried ribbons must be produced for not over 5.7¢ per lb. If a recognizably successful fiber ultimately evolves from the ramie plant, the domestic farmer must constantly watch his Chinese competition unless an essential element of the successful process is treatment of the green, freshly-harvested stalks, in which case it will presumably be performed locally. Price of the resulting fiber remains rather academic until utilization of the fiber settles on a stabilized basis.

When You Have the Fiber, What Good is It?

IT SEEMS to be agreed among competent investigators that ramie is one of the oldest textile fibers utilized by the human race. There is evidence that it was used among Oriental peoples before the appearance of written records. Opinion differs whether or not it was used in Egypt for mummy wrappings. J. Merritt Mathews in "Textile Fibers" says, "It may have been used in Egypt for mummy cloth contemporaneously with flax." A. C. Whitford says, "It was used by the ancient Egyptians in the wrapping of their mummies." George N. Lowry says, "Ramie was known before the pyramids were built; and while we have now in existence many thousand yards of linen made at that period, I have never heard of any moderately old ramie cloth."

The difference of opinion indicated in the three quotations just given is typical of much that appears in literature relating to ramie. However, there are certain test data which must be taken as valid at least for the samples under test. These tests indicate that ramie has some qualities which are excellent in a fiber for textile use and some unfortunate and almost disqualifying qualities. Scientific experimenters will continue to consider ways to use the fiber in which only its best characteristics will be put to trial or they will persist in the endeavor to overcome the poorer characteristics. Some ramie enthusiasts quote data as it suits them and deny or disregard the reality of the undesirable properties. Disillusioned investigators are prone to stress only the fiber's disqualifying factors.

Many of the most articulate spokesmen for ramie have done it more damage in the eyes of the conservative part of the textile community than have its severest critics. Half-truths, garbled quotations, flagrant misstatements make the impartial witnesses look askance whenever ramie comes upon their horizon.

The headlong irrational hysteria of a mystic cult is evident in much of the literature on ramie. Quoted fragments from scientific writings are offered to prove just the contrary of what the complete quotation would

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1923–1926.—Rheabat Corp., Groton St., East Pepperell, Mass., capital $1,500,000. H. G. Beede, president; D. E. DeLape, superintendent. DeLape degumming process. Had 32 automatic looms.

1924–1926.—American Rhea Spinning Co., Putnam, Conn. Capital $500,000. Took over Manhasset Mills.

1924.—Jonas Brolin, Oakland, Calif. Degumming process by freezing.

1926.—National Rhea Co., Putnam, Conn. J. O. Ames, president

1926.—Providence Rhea Co., Providence, R. I. Holding company for National Rhea Co., of Putnam, Conn.

1927.—Wool substitute imported from Italy and England by Irving Horowitz, 66 Grand St., New York, and processed by Colonie Fiber Co., Colonie, N. Y. (thought to be ramie)

1929.—Ross Fiber Co., New York. Processed fiber grown in Siam.

1929.—Woolike Mfg. Co., Bush Terminal, Brooklyn, N. J. M. J. Ross, president. Degumming process.

1929.—Basch & Greenfield, 67 Seventh Ave., Newark, N. J. Reworked wool; prepared ramie by special process to blend with wool.

1929.—Lowry & Grant, 79 East 130th St., New York. Decorticating machine.

1930.—Southern Textile Mfg. Co., 252 Northwest 29th St., Miami, Fla. Henry Leopold degumming process.

1930–1931.—Bast Fibers, Inc., North Chelmsford, Mass. John J. Rascob, Jr., in charge. Experimented on fiber to serve as wool substitute, and later on what was described as "synthetic linen."

1931.—Universal Fiber Corp., 350 Madison Ave., New York. Degumming process. Organized by Dr. Samuel S. Eveland and E. C. Stuckless; capital $1,500,000.

1934–1945.—Joseph A. Manahan, Newton, Mass. Manawul process, decorticating and degumming.

1941–1945.—International Ramie, Inc., Buffalo, N. Y. (formerly Bridgeport, Conn.) Degumming process.

1941–1945.—Florida Ramie Products, Inc. (A. C. Kidde, president), Belle Glade, Fla. Hemp decorticator, also ramie production.

1943–1945.—Newport Industries, Inc., Pensacola and Clewiston, Fla., associated with U. S. Sugar Corp. Plant to be built at Canal Point. Decorticating machine invented by Anton F. Burkhardt.

1943–1945.—Haitien - American Development Co., New York. Owns Dauphin Plantation, Fort Liberte, Haiti. Corona decorticator made by Krupp of Essen, Germany.

1944–1945.—Leone Plantation, Teague or Buffalo, Texas. H. W. Hawker, manager, assisted by L. W. White. Use Hawker-White process of decortication in field.

1944–1945.—E. H. Hutchinson, Hingham, Mass., associated with Newport Industries, Clewiston and Pensacola, Fla.

1944.—Roberto Maduro, Ezekiel Plantation, Santa Lucia, Camagney Province, Cuba. Planted 165 acres.

1944.—Henry Ford, Brunswick, Ga. Reported to have grown ramie experimentally for use with plastics.

1945.—C. R. Short, of Florida Industrial Laboratories, Clermont, Fla. Portable decorticator used at State Farm at Belle Glade.

1945.—Newnan Cotton Mills, Newnan, Ga. Spinning experiments.

1945.—Bast Fiber Development Corp., New York. David E. Patterson's patent decorticator.

1945.—Gilbert Brereton, Atmore, Ala. Decorticator.

1945.—Sea Island Mills, Inc., New York. Using Gardiner decorticating machine at Moorehaven, Fla.

1945.—Dr. Brown Landon, Winter Park, Fla. Experimenting with conversion process at Zellwood, Fla.

1945.—J. S. Reeves, Boynton, Fla. Decorticating process.

1945.—Peter J. Schwertzer, Inc., Elizabethton, N. J.

The following is an incomplete list of foreign ramie enterprises:

1900–1931.—Erste Deutche Ramie Gesellschaft, Emmendingen, Germany. All processes from plant to woven fabric.

1900–1931.—Felicien Michotte, Paris, France. Decorticating machine.

1901.—M. Bachelerie, Paris, France. Chemical treatment with carbonic and hydrochloric acid.

1901.—M. E. Bert, Paris, France. Crushing and degumming process.

1901.—Pierre Faure, Limoges, France. Decorticating machine.

1904.—Alfred D'Estienne, Marseilles, France. Decorticating machine.

1905.—Hubert Rocken, Duren, Rheinland, Germany. Decorticating machine.

1908.—Compagnia Cubana de Fibras, Havana, Cuba. Marti decorticating machine.

1908.—McGregor - Smith Co., Shanghai, China. Complete process.

1911.—Max Einstein, Bossenhof, Hamburg, Germany. Decorticating machine.

1911.—World Fibers Machinery Corp., Ltd., London, S. W., England. Wright's patent decorticator.

1911.—Thomas Barraclough, Harrowgate, Yorkshire, England. Decorticating machine.

1914.—W. A. Mather, Whalley Range, Manchester, England. Complete process.

1918.—La Societe Francaise du Roussage Industrielle, Bonatable, Sarthe, France. Rossi bacterial retting process.

1923.—Rexroth Process, Fuersturberg-Mecklenberg, Germany. Degumming.

1930.—Firma Valentin Jaeggle, Trautenau, Czechoslovakia. Decorticating machine.

have stated, statistics are made to do tricks, and much of the approach is wholly and exclusively agricultural despite the fact that it is presumably the textile use of the fiber which is going to give it whatever value it can possibly have to the farmer.

RAMIE'S TENSILE STRENGTH. The top ramie virtue is strength; not only when dry, but actually this strength increases when wet. It resists rot and can be bleached to snowy whiteness. J. Merrit Matthews states these facts as follows: "The fiber of ramie is very strong and durable, probably ranking first of all vegetable fibers in this respect. It is also the least affected by moisture. It has three times the strength of hemp, and the fibers can be separated to almost the fineness of silk. Ramie also has the special advantage of not rotting when exposed to weather conditions or when immersed in water. . . . The fiber of ramie is exceptionally white in color, being almost comparable to bleached cotton in this respect."

Ramie's worst features (as a textile fiber) are its brittleness and low torsional strength. These features are touched upon and explained by Emil Ott in "Cellulose and Cellulose Derivatives" as follows: "Its brittleness and inelasticity limit its uses greatly. . . . In ramie the cellulose crystallites have an orientation almost parallel to the fiber axis. As a result, ramie fibers have the greatest tensile strength of all natural fibers, but they are brittle and weave into a relatively harsh fabric. Perfect alignment [of the crystallites] thus makes for great strength and rigidity in the fiber direction, but brittleness in the transverse direction." Matthews says: "Along the fiber, joints and transverse fissures are of frequent occurrence."

RAMIE'S WEAKNESS. The weakness of ramie fibers, yarns, and fabrics when subjected to bending and torsion is due to a large number of transverse fissures of varying depth in the micellar structure of the fiber, according to a report by G. Gordon Osborne, fellow of the Textile Foundation, in the December, 1934, *Textile Research*. "Mechanical action," states Mr. Osborne, who was working at that time on the micro-analysis of textile fibers under Prof. E. R. Schwarz at Massachusetts Institute of Technology, "starts and intensifies the formation of these markings; and, as treatment proceeds, the number of trans-fiber fissures increases."

Fiber data reported by Reginald Meredith, of the British Cotton Industry Research Association, confirms the high tensile strength of ramie as found by previous experimenters but indicates an extremely low extensibility. The breaking strength averages 6.7 g. per den., compared with flax at 6.1, Jap silk at 4.4, jute at 3.5, and American cotton at 2.8. However, the extension at break is only 3.74% against Japanese silk at 23.4% and cotton at 7.16%. The two more important bast fibers, flax and jute, have lower extensibility at 3.01% and 1.80% respectively. Emil Ott, in the work previously quoted, reports tensile strength in kilograms per millimeter at 55 for cotton fiber and 75 for ramie fiber, and at 10 to 25 for cotton yarn and 20 to 40 for ramie yarn. Ott gives the percentage of elongation as 6 to 8% for cotton and 2.7% for ramie. He also reports on degree of polymerization, rating ramie at 2,660, cotton at 2,020, and Manila hemp at 1,990.

Stern-tube packing of tallow-impregnated ramie made by Johns Manville Co.

It appears that on some points tested jute is inferior to ramie. In rating its years of commercial success one must not lose sight of two things —(1) jute's extremely low cost, and (2) its virtual limitation to the two time-proved uses of bagging and linoleum base.

Lack of torsional strength in ramie has been demonstrated by various experimenters by knotting the fiber or the yarn, subjecting the sample to stress, and noting that it breaks more readily than an unknotted sample, and that the rupture is usually at the knot. No scientific data on this form of test with comparable figures for other fibers appear to be available.

The fiber as prepared by one process is relatively smooth on the surface and devoid of convolutions, conditions which of course make preparation and spinning on conventional short-fiber machinery, such as cotton or woolen, difficult at best. Actually much merit of a long-fibered material is lost by cutting it up for handling on short-fiber machinery. If handled in original length, ramie would require flax spinning machinery, of which virtually none exists in this country. If reduced to lengths not exceeding 5 or 6 in., the fiber may be handled in worsted machinery. One process results in a curly fiber which, it is said, handles readily on usual machines. In the Far East ramie is spun on hand wheels, as flax has been for undetermined centuries; but, even in the Far East, there have arisen no important industrial plants utilizing ramie for machine production.

WHAT ARE ITS USES? In the light of the known physical properties of ramie, it is perhaps useful to check on the actual commercial uses which have had some degree of acceptance in its last 40 to 50 years. It is reasonable that it should have use in cordage (in which the other bast fibers hold a dominating position). Its resistance to rot also fits it for cordage exposed to water and the weather. A German company, Erste Deutsche Ramie Gesellschaft, at Emmendingen, made ropes which girded the gas bags on the Graf Zeppelin and similar craft. That German company has the distinction of having been longer in the ramie fabricating business than any other in Europe or the Western Hemisphere. It operated for nearly three decades into the early 1930s, but its present postwar status has not yet been reported.

Although statements have been made that ramie had many important textile applications in World War II, it is difficult to find confirmation in any military specifications—the only one coming to light being the Army-Navy Aeronautical Specification AN-W16 for webbing in which three constructions are specified: (1) linen, (2) linen-hemp, (3) linen-ramie. No records were uncovered to indicate whether any material was actually delivered which included ramie with the flax. We cannot find that it was listed in any U. S. military specification under rope.

It was, however, used by the Navy for stern-tube packing. In this use its strength and absorption factors were important. Its purity resulted in almost zero scoring of the revolving shaft, a performance superior to that of previously used flax. Although described as highly successful in this application, the properties utilized were only a few out of the many necessary to qualify a fiber for successful general textile use.

(*Continued on page 206*)

Tests Show BEST COTTON For a Specific Purpose

HIGHLIGHTS: *Boll weevil responsible for much confusion as to cotton properties, says W. O. Jelleme at Cotton-Textile Institute meeting—Many tests developed to determine characteristics of different strains—Trend today is toward fewer varieties—Cotton picker may affect standards already set up.*

"BETTER METHODS of growing and marketing cotton seem now to be ahead of us", W. O. Jelleme, Director of Developments, Pacific Mills, stated at the annual convention last month of the Cotton-Textile Institute.

In "pre-weevil" days, he said, varieties of cotton were so thoroughly mixed as to have the effect of being one kind of cotton; but with the coming of the boll weevil, over 1,000 cotton strains were segregated or produced in efforts to find early-maturing varieties that would foil the weevil.

With this primary emphasis on the agricultural aspect of cotton, the manufacturing aspect naturally suffered. Spinning properties and resulting products differed greatly, depending on the cotton strain; and grading standards were essential. At first, the U. S. Department of Agriculture set up standards for grade and staple. Later, working with various individual investigators and through groups such as the American Society for Testing Materials, it established standard methods of test—for fiber strength, such as the Chandler Bundle Method; for obtaining more accurate measurements of staple length, such as by the Suter-Webb Sorter in 1928; for immaturity and weight per inch or fineness of the fiber in 1931 at the Fiber Laboratory in Washington under Dr. R. E. Webb.

TESTING SERVICE. A testing service was made available to breeders and others on a fee basis in 1941 at laboratories at Clemson, S. C., Stoneville, Miss., and College Station, Texas. Under this testing service, anyone interested in the use of cotton, provided there is sufficient testing capacity available, can obtain from the Department of Agriculture Testing Stations reports on the fiber properties and the spinning results of any sample of cotton which he submitted.

One of the features that made this testing service valuable was a technique developed by M. E. Campbell and J. M. Cook, by which it was possible to spin a sample of yarn from as little as 6 lb. of cotton and yet to be able to depend on that yarn as being comparable with yarns spun by mill-manufacturing procedures. The result might not be equal to the mill results, but it was established that the differences between samples spun in the laboratory would be indicative of the differences which would be obtained in the mills.

Fibrograph being used in Clemsen-Institute Laboratory, Clemson, S. C., as a part of Cotton-Textile Institute's testing service.

As assistance in gaging the importance of various fiber properties which can be ascertained by testing, Dr. Webb reported the results of several years of research on the relative importance of the various fiber properties in determining yarn strength [TEXTILE WORLD, May, 1945]. Mechanical picking and new developments in gin cleaning machinery may alter the relationship established by Dr. Webb between grade and yarn strength and may even make present grade standards inadequate.

The latest developments in instruments for testing cotton fiber permit a wide array of means by which tests can be made with reasonable speed on the fibers; and the results of which in the form of tests must, therefore, be recognized by buyers as a part of their available information. The Pressley Fiber Strength Tester, the Fibrograph for determining fiber surface area and similar instruments all add possible knowledge more nearly free from human influence which can be used in determining the value of cotton. The instruction service in testing being offered by the Cotton-Textile Institute and directed by John T. Wigington is a valuable contribution. Variety marking of bales introduced may, of course, reduce the amount of testing necessary.

FEWER VARIETIES. The number of varieties of cotton has now been reduced to fewer than 100 of which probably 30 are commercially important and 6 make up 34% of the U. S. production. These may be grouped into half a dozen variety types such as Sea Island, American-Egyptian, Acala, Long Staple Upland, Medium Upland, Short Upland, and the Texas High Plains Varieties.

If cotton is to be specified for purchase according to test results, spinners must first of all know what they need for their product. Although test methods and testing instruments are available, the problem of assigning standards to test results which can be depended upon to produce the proper quality of the final product is in its infancy. No one simple test is available to cover all properties, and too much dependence on one test would probably make us no better off than too much dependence on classing results has in the past.

It may be possible that in the future, grade for trash and grade for color will have to be separated and recognized as two factors instead of as one factor.

STA Asks for $6,000

The Southern Textile Association will ask the Textile Foundation for $6,000 annually to conduct research and association activities, according to a resolution passed Dec. 8 at its annual meeting in Charlotte.

RUNNING RAYON ON THE WOOLEN SYSTEM

Requires Care in Fiber Selection

HIGHLIGHTS: *Best production obtained using 5.5 den. staple if the staple length is 2-1/2 in. long — For 3.0 den. use a 2-in. staple — With bright staple fiber the length should be increased by one-half inch.*

By J. T. DRENNEN and T. A. BOSWELL
Textile Research Dept.
American Viscose Corp.

THE WOOLEN SYSTEM of manufacturing can be used for handling rayon, as well as wool, with fewer operations and greater production.

Exhaustive tests have been made and studied to discover the best and most workable methods for making good rayon yarn on the woolen system. These tests cover every phase of yarn manufacture from receipt of the stock to delivery of the finished product.

In four years of experimenting by the Woolen Division, American Viscose Corp., Textile Research Dept., we feel we have encountered most of the common and troublesome problems in the handling of 100% rayon staple as well as rayon blended with the majority of the textile fibers in use today.

Rayon of various types and in a wide range of staple lengths and deniers was used. Early experience showed that the problems encountered in processing were accentuated when using 100% rayon, and thus it became our practice to use 100% rayon for the majority of our experimental work. The ability of wool to "carry" other fibers makes a wool-rayon blend a less suitable material for testing purposes. Rayon blended with coarse wools will react in a similar manner to 100% rayon, but finer wools tend to lessen processing difficulties. The problems discussed and the suggestions proposed for their solution are equally applicable to any situation in which they may arise—whether it concerns 100% rayon, or rayon blended with any type of wool and many other textile fibers. We have made special mention of those cases requiring a marked difference in procedure.

All tests were made on full-size machinery, such as is found in any modern woolen mill. Therefore, the suggestions which follow will be found to be practical and readily adaptable to production conditions.

Varied-staple fiber produces a full and bulky yarn, but when optimum strength is required an evenly cut staple gives best results.

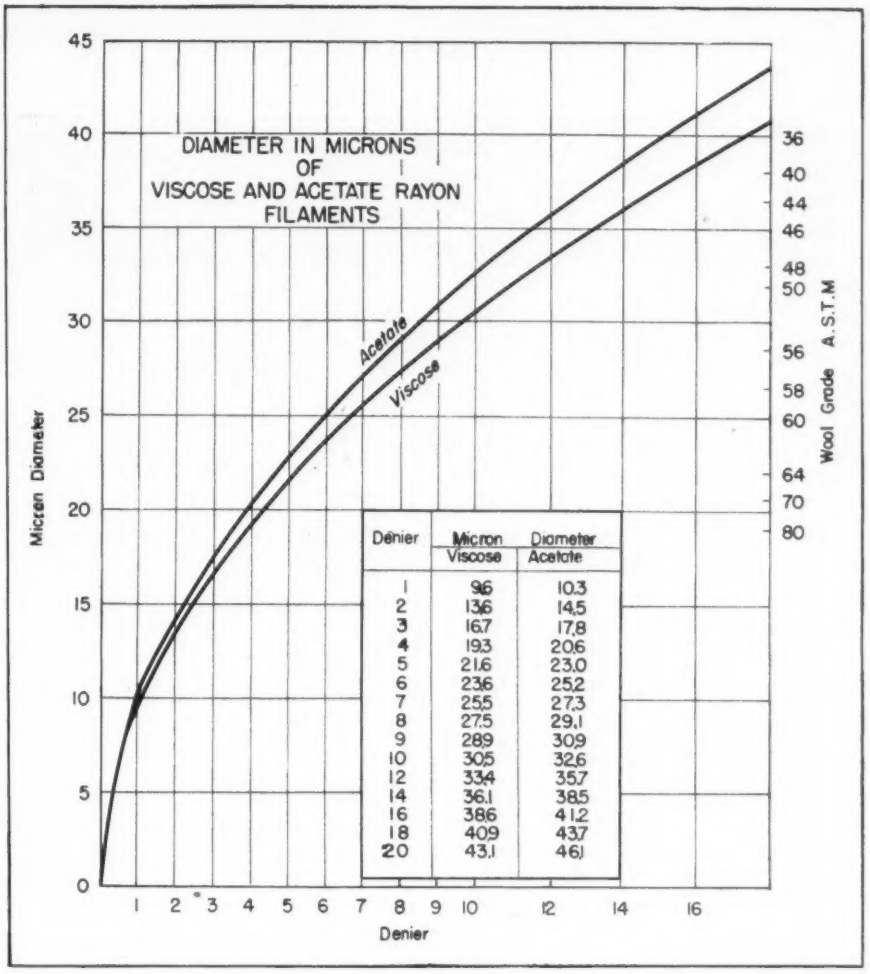
CHOICE OF STAPLE. The very first step toward making a good rayon yarn on the woolen system is the choice of the most suitable type of rayon staple in the proper staple length and denier with regard to the end use of the yarn.

If the fabric designer and the individual responsible for selecting the raw materials are not intimately familiar with the effect of fiber or yarn-processing and in the finished fabric when various rayon staples are used, it would be useful for them to consider such problems as explained in this discussion. Because fine wool will carry almost any other fiber in equal amounts, there is a tendency to choose rayon staple for blending with wool with little regard to the widely different properties of the various types, lengths, and deniers. The optimum results in yarn quality and fabric effect are obtained only by careful consideration of all the fibers used in a blend. It is not difficult to visualize the differences in yarn containing fine denier of short staple and coarse denier of long staple. Therefore, it follows that the same care must be taken in choosing the rayon to be used as is taken in choosing wool types.

There are some woolen manufacturers who prefer to use a rayon staple with a varied length dispersion. It is felt that by using a varied-length staple a fuller yarn is obtained than when using an evenly cut length. The shorter fibers present give more fiber

ends, which results in a bulkier yarn, while the longer fibers give strength. If a varied-length description is used, the midway point between the two extremities of length should closely correspond to the specifications for length given in the next paragraph. When optimum strength is desired, an evenly cut staple should give the best results, but for other yarn and fabric characteristics varied length is preferred.

Our tests to determine the best staple lengths were conducted on evenly cut staple (for clarity of data) and in a variety of deniers and luster. For ease of processing and quality of yarn with regard to strength and evenness we have concluded that a 5.5 den. 2½-in. dull "Fibro" (American Viscose trade-mark) is best for 1½ to 4 run yarns (8 to 21⅓ cut), 3.0 den. 2-in. dull is best for yarns finer than 4 run, while for certain fabrics that call for a more harsh hand and coarser yarns, certain special fibers of a denier coarser than 5.5 and in lengths of 3 to 3½ in. may be desirable.



Denier	Micron Diameter Viscose	Micron Diameter Acetate
1	9.6	10.3
2	13.6	14.5
3	16.7	17.8
4	19.3	20.6
5	21.6	23.0
6	23.6	25.2
7	25.5	27.3
8	27.5	29.1
9	28.9	30.9
10	30.5	32.6
12	33.4	35.7
14	36.1	38.5
16	38.6	41.2
18	40.9	43.7
20	43.1	46.1

Relationship between wool grade, micron diameter, and denier for viscose or acetate staple fiber may be determined by following across horizontally from the wool grade until the viscose or acetate line is met. Then, drop a vertical line. Point of intersection with the denier scale gives equivalent denier size for wool quality.

LUSTER. Dull staple is preferred over bright because its rougher surface enhances its cohesion. This property also aids in carrying the emulsion and results in less fly and better fiber control throughout carding. Good fiber cohesion is necessary in the transporting of web or sliver from one card to another and is important in obtaining an even roving, both yard-for-yard and end-for-end across the card. It was found that the importance of fiber cohesion carries through from carding to the spinning operation in maintaining high production and producing even, strong yarns.

When luster is a desired characteristic of the end product, bright staple can be used. In such cases, staple length should be increased ½ in. over the staple length of the dull fiber that would ordinarily be used for each particular yarn size, in order to compensate for the decrease in fiber cohesion. This increase in staple length can be made without causing robbing between the condenser tapes because bright type is a smoother surfaced fiber. Consequently, the fibers slip past each other with greater ease. The finished yarn will be slightly leaner than yarn of the same size made from dull staple.

STAPLE LENGTH. When 5.5 den. dull is used, a staple length of 2½ in. is preferred over other lengths because it is possible to maintain high carding and spinning production and still spin a strong, even yarn. Here again fiber cohesion figures in our choice. When 3.0 den. dull Fibro is used, it is possible, because of the increased fiber cohesion of this denier, to cut the staple length to 2 in. This, in turn, insures a more perfect splitting of the web by the condenser tapes, which results in a more even roving. Fibers coarser than 5.5 den. dull require a staple length from 3 to 3½ in. to compensate for the loss of cohesion due to the coarser fiber. It might be assumed that uneven yarns would result from this longer staple because of robbing between the tapes, but this is overcome by the fact that in heavier yarns the stock is handled on cards with fewer delivery ends.

DENIER. Choosing 5.5 den. for yarns in the medium size-range provides sufficient fibers per yarn cross-section, and there is less danger of neps forming than in fibers of finer deniers, which freedom results in higher carding and spinning production.

For yarns finer than 4 run, 3.0 den. Fibro has been found to be best. Since 3.0 den. is finer than 5.5 den., a fuller web will be fed to the dividing rolls, hence more fibers in a given diameter roving.

For yarns coarser than 1½ run, a denier heavier than 5.5 is more practical. In coarser yarns, the increased fiber rigidity of coarser denier rayon is helpful in forming a rounded roving that will not flatten out so readily; a rounded roving being essential to the spinning of even yarn. This flattening of the roving is the main drawback to using fine denier for coarse yarns. Another factor is that fine deniers require more carding and lower production due to overloading of the card.

In general, these deniers and lengths were chosen as providing the optimum satisfaction from the standpoint of minimum picking, a clear web, sufficient fiber cohesion, freedom from robbing at the tapes, good condensing, high production, and finally a strong, even yarn.

This is the first of a series of articles on the handling of rayon on the woolen system. The next section will be on picking and oiling.—EDITOR.

Control of WEAVE-ROOM SECONDS Requires Systematic Check-Ups

HIGHLIGHTS: *Each second should be recorded as to the loom on which it was made and the weaver who made it—Reports permit analyses of efficiency and quality performance of each weaver and fixer—Procedure should be standardized and written into manual form.*

By HENRY I. JACKSON

PROPER ORGANIZATION for reporting and following up seconds from the cloth room will improve weave-room quality. This is especially true of a large mill where all inter-departmental problems must be accurately reported and controlled with a minimum of red tape. Too frequently, the method for handling seconds ends with the weave-room second hand receiving the cloth-room report and showing up the defects to the weaver. Experience indicates that in most cases if the second hand is left to wrestle with the problem alone, a showing up of the defects may become an ineffective routine.

The problem of weave-room quality is important enough to warrant a great deal of attention by top supervisors and by the mill management. The overseer of weaving and the mill superintendent should know what kind and on which looms cloth defects are made and who is responsible for making them. To accomplish this, one large Southern mill has clearly set forth, in the form of a standard-practice manual, definite procedures for obtaining the facts behind weave-room quality.

In the offices of the general overseer of weaving and of the mill superintendent, there are complete records of seconds and shorts made by all

Efficiency Report

Weaver John Doe

Yr. 1945 W.E.	Construction	Picks Total	Picks 1st Qual.	Picks 2nd Qual.	Yards Total	Yards 2nd Qual.	Weekly Efficiency
4-29-45	34½" 98X54 1.92	14574	14574		7497		90.0
4-29-45	39" 98 X 54 1.70	1962	1962		1009		90.8
5-6-45	34½" 98X54 1.92	12058	11889	169	6203	86	93.0

Fig. 1. With this record, the mill superintendent has all the facts on the quality performance of each weaver.

Daily Report— Seconds and Shorts

Date 10-8-45

Style	Construction	Defects	Yards	Total Yards	Loom No.	Shift
1732	39" 98 x 54 - 1.70 AA	Thread out	7		362	
		Ropey Filling	7½		156	
		Drop Thread	6½		305	
1736	52" 42X44 - 1.55A	Float-Torn Selvg.	43½		1142	
		Doubling	27½		1235	
		Cocked Filling	21½		1174	
		Bad Selvage	5		1137	
		Oil	6		1187	
		Thin Place	9½		1186	
¢ Today		Total Seconds and Shorts				

Fig. 2. This daily report by a cloth grader gives complete data on each second found by the grader.

Fig. 3. The total seconds found each day are classified by loom numbers and weavers.

Weaver's Daily Seconds Report

Date 10-8-45

Shift	Loom No.	Weaver	Style	Construction	Yards	Defects
			1732	39"98X54-1.70AA		
	1166		1732		98	Jerk-ins
	426		1732		56	Misdraw
	115		1732		50	Drop Thread
	399		1732		51	Thread out-draw back
	106		1732		44¼	Thread out
	491		1732		41	Draw back
	582		1732		60½	Float
	444		1732		107¼	Misdraw
	1326		1732		125	Doubling
	536		1732		98	Misdraw
	378		1732		91	Doubling
	1141		1732		63	Doubling
	515		1732		99¾	Misdraw
	1325		1732		135¾	Kinky Filling

Copy to Supt., Overseer Weaving

weavers. The superintendent has a record, Fig. 1, of the weekly production efficiency and seconds output of each weaver for a period of 52 weeks. One page is devoted to each weaver; and from it, the superintendent can quickly determine the weaver's quality record.

MEASURING PERFORMANCE. The overseer of weaving has similar information and can measure the performance of a given weaver with accuracy. This gives him a method of control which can be used to supplement the work of the second hand in improving quality. With such a record, the overseer or second hand, during the personal interview for showing up of cloth defects to the weaver, is able to cite costs and figures and to discuss the subject with the weaver intelligently.

The information for this all-inclusive record is obtained from the daily report, Fig. 2, of seconds and shorts by the cloth-room graders. A copy goes to all overseers and the superintendent. The reports of the graders are combined into a single report by the cloth-room clerk, who classifies all seconds and defects by loom numbers and styles. This information is entered upon the weaver's daily seconds report, Fig. 3. The "weaver" column is left blank, and the names of weavers are written in when the report reaches the weave room. A copy of this report goes to the overseer of weaving and the superintendent.

In the superintendent's office, the total seconds produced by a weaver during the week are entered upon the weaver's record, Fig. 1, mentioned above. This data may be used also to check upon the efficiency of a fixer's section.

The usual daily report of cloth-room production, Fig. 4, can be used as an indicator of results accomplished. This record is a typical report showing total production, total seconds, and general percentage of seconds. Day-to-day fluctuations will occur; but in the long run, some improvement should be noted in the general percentage figure as a result of closer and more detailed records.

Cloth Room Daily Report

Date 10-1-45

Construction			Stand. Wt.	Grade	Aver. Wt.	Pts. Hvy.	Pts. Lgt.	Pounds	Yards	Imperf. Allow.	No. of Bales	Rolls	Remarks
65"	36	36	1.25	A	1.25			2868	3577			7	
72"	40	26	1.17	PW	1.16	1		6157	7123			14	
													Bales
39"	98	54	1.70	AA	1.72		2	16853	28945¼		32		
52"	42	44	1.55	A	1.56		1	8397	13067½		15		
			Total firsts —					34275	52783		47	21	
39"	98	54	1.70	AA	1.70			939	1597½		2		20/40
Burlap								323	1178				
			Total Seconds					939	1597½		2		
			Total today					35537	55586½		49	21	
			Percentage					.0287					

Fig. 4. The mill's quality performance is shown by the daily report of cloth-room production of firsts and seconds.

Carbon Dioxide Is Suitable Agent To Fight TEXTILE FIRES

HIGHLIGHTS: *Portable cylinders and permanent systems can be used to stop fires without damaging materials—Especially suitable for electrical fires and burning liquids—Enclosed areas, such as ducts, easily flooded with gas—Releasing of gas can be coupled with closing off area of fire and with the sounding of an alarm system.*

By F. B. ALLEN
Chief Engineer, C-O-Two Fire Equipment Co.

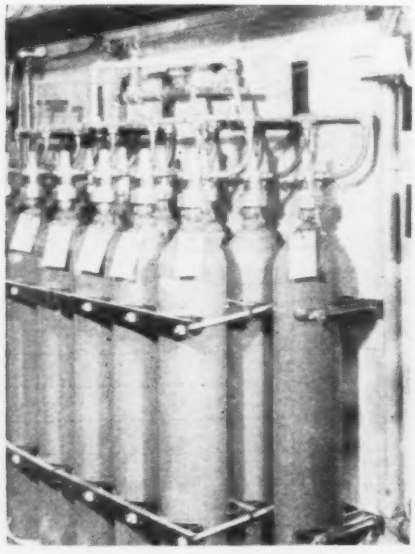
FIRE PROTECTION in textile mills depends largely upon water; but for safeguarding certain hazards, carbon dioxide is more suitable than any other agent in the field. Carbon dioxide will put out flammable liquid fires; and, being a non-conductor of electricity, it can be used with safety for the protection of electrical installations. It can be employed in any quantity without fear of damaging materials or equipment, while its penetrative qualities enable it to permeate recesses inaccessible to direct streams of water or other extinguishants. The speed with which the gas goes to work on a blaze has added significance when it must cope with any fast-spreading fires.

Carbon dioxide can be applied to a variety of fire hazards in a number of ways. A wide range of apparatus, from hand extinguishers to built-in systems, has been developed for its application both to localized hazards and to those that require the flooding of a whole room with gas.

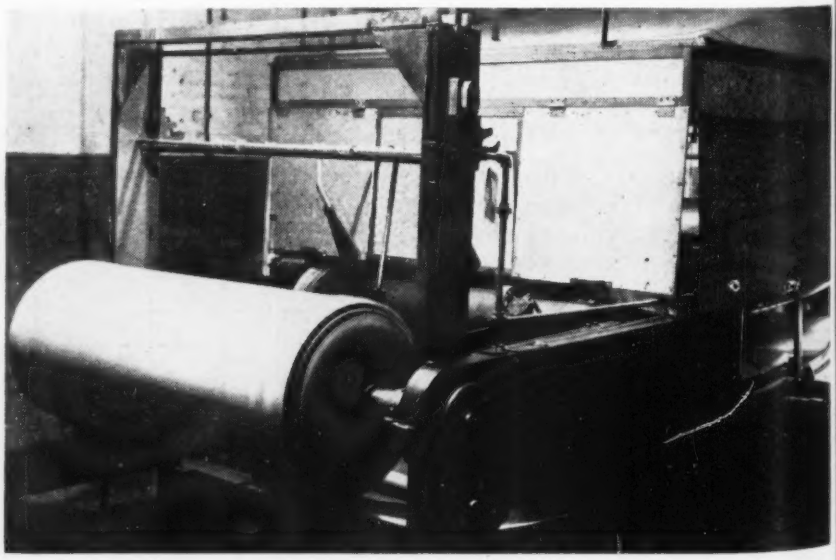
GAS IS COLD. Carbon dioxide looks like steam as it issues from a nozzle, but instead of being wet and hot, it is dry and cold. A heavy gas is discharged from portable units through a hose and a horn-like nozzle aimed by hand. A recent development for portable extinguishers is the "Squeeze-grip" valve which is operated by hand pressure on a release lever located immediately above the carrying handle. The operator can thus operate the valve while carrying the extinguisher with one hand and the other hand remains free to carry and direct the discharge horn. This makes it unnecessary to set the extinguisher down to open or close the valve, as is the case with the older, handwheel valve. Gas pressure closes the valve securely against leakage when the grip is released.

Portables are intended chiefly for use against incipient fires and to provide protection against hazards of minor severity. They should be stationed in easily accessible places, and in number should depend upon the degree of hazard and the size of the extinguishers. The objective is to have at least one extinguisher within easy travel distance of every hazard.

FLOODING AREAS. Built-in carbon-dioxide systems, with their permanently situated piping and nozzles, can be made to serve two purposes. By means of these systems, enclosed areas



A battery of cylinders containing the supply of carbon dioxide for a built-in system.



When a built-in system is designed for local application of carbon dioxide, horn-like nozzles, as shown here, are located over or around the hazard covered.

can be flooded with gas so as to dilute the natural oxygen content of the air to a point where it will not support combustion. For example, for the protection of flammable liquids in storage—solvents, finishes, and other organic chemicals such as carbon disulphide, acetone, ether, and alcohol—total-flooding systems can be used most effectively. Localized protection for certain special types of hazards can also be provided by fixed systems.

Finishing processes involving flammable liquids can be protected by the gas applied either to local points or throughout an area, depending upon the nature of the process and the amount of space covered by it. Portables are often used for this sort of protection, but built-in systems may be indicated if the size of the hazard is great.

In a built-in system intended for "local application" of the gas, horn-type nozzles are located over or around the hazard covered, and are designed so as to concentrate a blanket of heavy gas upon a blaze to kill it before it has a chance to gain headway.

In a system for the total flooding of an enclosed or semi-enclosed space, baffle-type nozzles, mounted on the walls of the space, spread the gas rapidly and uniformly so that even out-of-the-way nooks and corners are filled with the gas.

Installation of either type of system is easily made by any experienced pipe fitter guided by the manufacturer's drawings.

VARIOUS CONTROLS. Both manual and automatic controls are used with fixed systems. With manual control, the gas may be released locally at the cylinders, or, when desired, by a remote-control pull box located near the entrance. Automatic controls may be arranged so that the system will be operated when the air in the protected space reaches a certain temperature or when the temperature rise is abnormally rapid.

A single battery of cylinders may be used to safeguard two ore more independent spaces, the gas being directed into any of the spaces endangered by means of selector or directional valves in the piping. In the "pressure-operated" type of system, gas from two control cylinders provides pressure to discharge the other cylinders in the same group. This eliminates weights or other gravity release devices.

Pressure trips for closing doors, windows, and the dampers of forced-ventilation ducts are installed in conjunction with built-in systems. These automatic devices, designed to confine the carbon dioxide and keep outside air from feeding the flames, are operated by the pressure of the discharging carbon dioxide. They can also be employed to operate shut-off valves in feed lines to gas or liquid-fired heaters. Circuit openers operated by carbon-dioxide pressure will cut off the power from electric motors and heaters. So that people in a protected area will be warned to leave before the gas is discharged into the threatened space, automatic devices can be used for sounding alarms and for turning on warning lights as soon as carbon dioxide enters a cylinder manifold.

Often a large battery of cylinders arranged in double banks is needed to supply enough gas for an extensive fixed system. Special header assemblies furnished by the manufacturer of the equipment are employed to link the cylinders together when more than one is required. The number of cylinders is dictated by the amount of carbon dioxide needed to protect the largest anticipated hazard.

New Safety for Mills

During the war, huge numbers of carbon-dioxide fire extinguishers, both portable and built-in, were made. Although the capacity for building such devices and for producing the gas was enormously expanded, none was available for textile installations, despite the knowledge that this system of fire fighting was particularly suitable in, for example, opening and picking rooms where water damage from fires often exceeds fire damage to equipment and stock. Also, carbon dioxide was known to be ideal for snuffing out fires in the ducts used to blow stock from one process to another, and on such finishing machines as singers.

As a supplement to regular sprinklers, carbon dioxide extinguishers are finding many specialized uses now that they are released from war duties.

The use of carbon dioxide in fighting textile-mill fires has been discussed thoroughly with underwriters, and they concur with the uses presented in the accompanying article. Many other specific uses are constantly being found, and special applications in his own mill undoubtedly will occur to the mill man.—EDITOR.

Here workers are shown that carbon dioxide may be used safely on live electrical equipment. Inset shows the "Squeez-grip" feature of the extinguisher being used.

Fig. 1. The opening and picking department of American Yarn, Inc., is equipped entirely with new machines and is housed in a new building. Note the visibility, evidenced by fact that photograph made without flashbulb.

Three-Phase MODERNIZING At Plants of American Yarn & Processing Co.

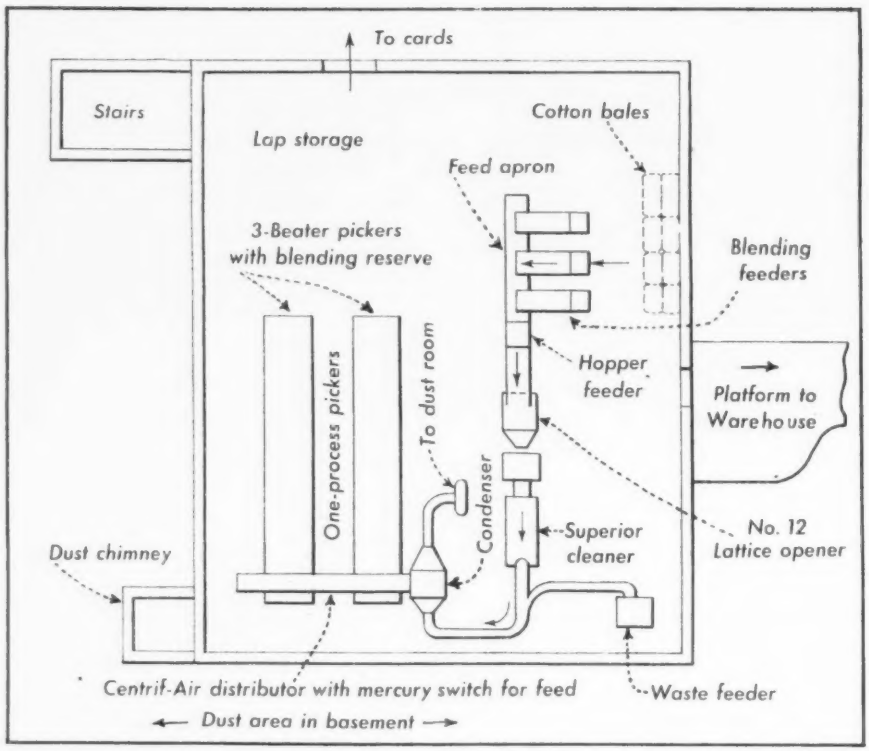


Fig. 2. This layout of opening and picking machinery is economical and requires only one operator.

HIGHLIGHTS: *New Machinery, buildings, and maintenance equipment featured at American Yarn & Processing Co's. mills — Improvements at Adrian, Madora, Maiden, and Woodlawn plants—The American Yarn, Inc., has installed new machinery throughout manufacturing processes.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

NEW MACHINERY, improved plant layout, and better maintenance are features of an outstanding modernization and expansion program which is in progress at American Yarn & Processing Co., Mount Holly, N. C. A producer of high-quality carded and combed yarns, this company has added new buildings, remodeled old ones, replaced older machinery with new, and improved old machinery. It has

equipped the Lenoir, N. C. mill with new machinery, and also completely equipped American Yarn, Inc., a subsidiary, with new machinery. It has started a new knitting mill in Mount Holly, paved many village streets, and in a score of ways altered vastly the physical condition of mill property.

As far as machinery is concerned, B. F. Mitchell, general manager of manufacturing at all American Yarn & Processing mills, states, "Two phases of modernization have been followed. New machinery was placed in some mills, while a long-range program of machine improvement for better operation and maintenance was carried out in other mills."

The Lenoir spun fibers mill, Woodlawn Mill, and American Yarn, Inc., mill feature most of the new machinery. The Adrian, Madora, Union, and finishing mills have obtained some new equipment recently, but their program largely has been to re-equip and improve standing machinery. In the cotton mills, long-draft roving and spinning have been installed, and, incidentally, the company was among the first of the combed-yarn manufacturers to install long-draft.

AMERICAN YARN, INC. As a result of the company program, American Yarn, Inc., is at the moment one of the most completely modern cotton mills in the country. It was formerly known as the Nims mill; it has been rebuilt and re-equipped with both processing and maintenance machinery. The mill manufacturers 4-ply 8s to 36s sewing thread from combed Egyptian cotton.

A new cotton warehouse of 300-bale capacity is adjacent to a new structure for opening and picking equipment. The opener and picker room is shown in Fig. 1. All of the equipment is new. Saco-Lowell machines, except for the Superior cleaner and Centrif-Air distributor. From the layout of machines, shown in Fig. 2, it is obvious that both opening and picking lines can be operated by one man.

Three blending feeders, feed apron, hopper feeder, No. 12 lattice opener, screen section, and the Superior cleaner comprise the opening unit. The cotton is drawn to the condenser and distributed by the Centrif-Air machine shown in the background of Fig. 1. The one-process, three-beater pickers are motor driven; mercoid switches control the feed; and blending reserves are included in the picker units. While this particular mill does not process synthetic fibers at the moment, it is interesting to note that the opening and picking layout is such that blending could be done, if desirable.

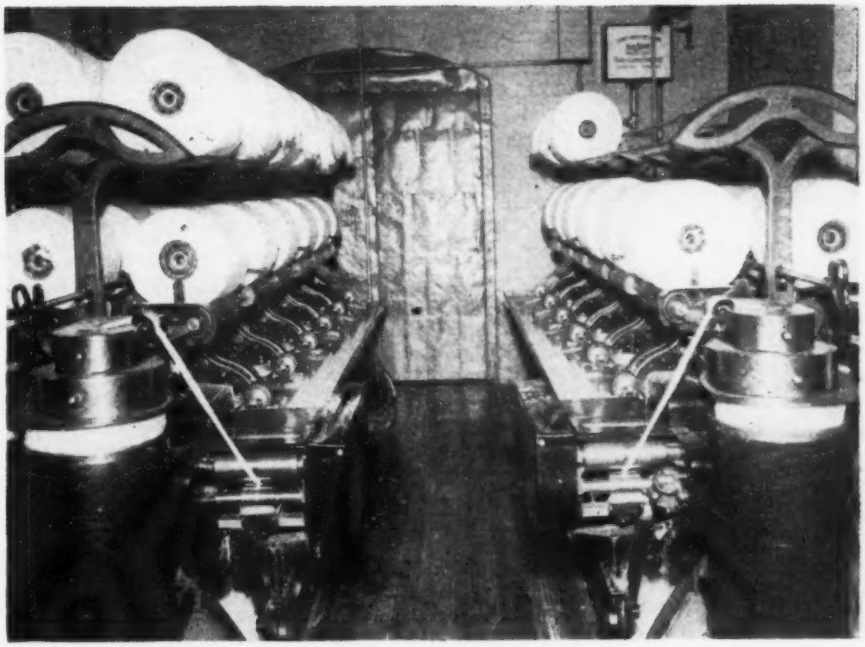


Fig. 3. New double-head combers (Saco-Lowell) which are used exclusively.

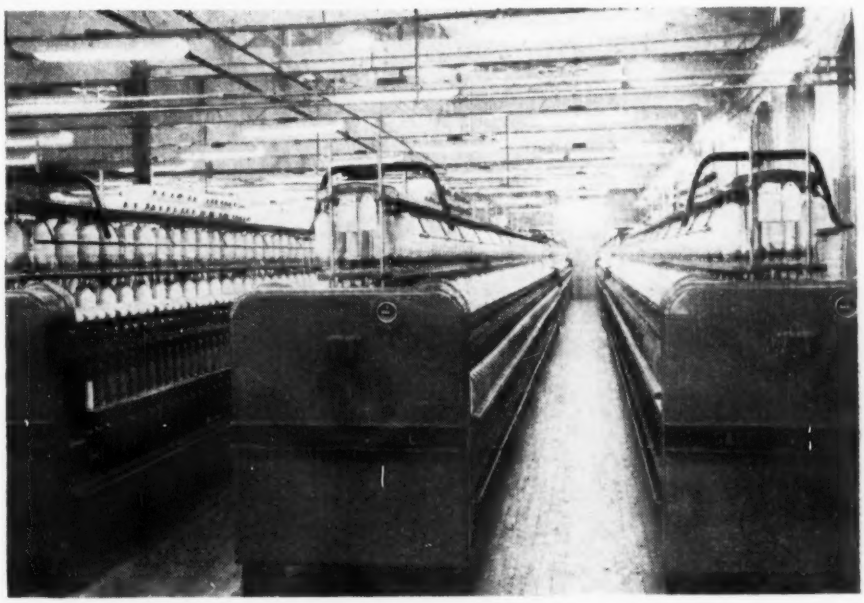


Fig. 4. New spinning frames are 4½-in. gage with 3-in. rings for numbers up to 20s.

Carrier Corp's. steam-coil heating unit is installed in the ceiling of the picker room. Fresh air is drawn from the outside and heated for employee comfort rather than from the picker room itself. Conventional dust rooms are used instead of condensers or filters.

NEW CARDS AND SPINNING. New Saco-Lowell cards are now in operation, and soon a vacuum stripping system will be installed. Whitin regular drawing is employed at both breaker and finisher drawing processes. Saco-Lowell lap winders and double-head combers, both new, are used. The new Saco-Lowell double-head comber is shown in Fig. 3. The processing routine, after carding, is breaker drawing, lap winding, combing, and finisher drawing.

As shown in Fig. 4, the new Saco-Lowell spinning frames are 4½-in. gage and equipped with 240 spindles and the Roth long-draft system. They are especially interesting because of the large-package deliveries, having 3-in. rings for numbers up to 20s and 2½-in. rings for finer numbers. Paper tubes are the yarn carriers, and the wooden-sleeve spindle is installed on all frames. This is reported to be operating in some mills at around 10,-

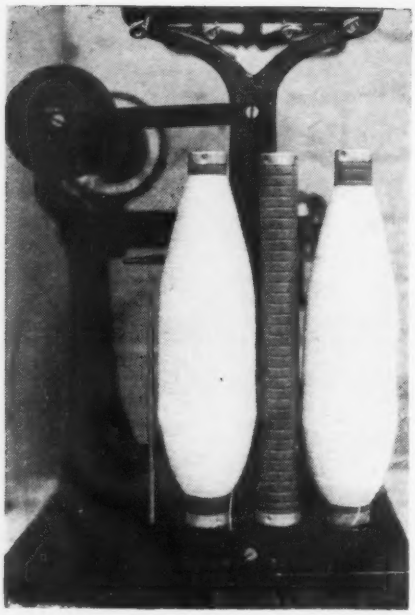


Fig. 5. Large packages of 16s yarn from 13-in. rings and made on paper tubes.

000 r.p.m.; but the installation at American Yarn, Inc., is entirely new, and no attempt can be made to obtain maximum speeds until rings are thoroughly broken-in. Photographs of the 3-in. ring packages, as well as of the paper carriers, are shown in Fig. 5.

ADJUSTABLE-SPEED DRIVES. Individual drives for both spinning frames and twisters employ the new Allis-Chalmers Vari-Pitch drive. These are shown in Fig. 6. Speeds can be varied without resorting to a change in belts or frame sheaves. To change speeds, the section man adjusts the large nut at the end of the motor shaft. By spreading the sheaves more widely apart, he can bring the belt to ride on a smaller circumference and thus decrease the speed of the frame. A reverse operation will increase the speed.

A Bijur central-lubrication pump is installed in the heads of spinning frames, as well as in the H & B twisters. The latter machines are new also. They are 5-in. gage, tube-creeled, and equipped with Wak yardage counters for the production of knotless 4-ply yarns.

Between spinning and twisting, the mill uses Foster winders. Whitin 60-end reels are employed to skein the yarns for shipment.

MAINTENANCE EQUIPMENT. From the standpoint of maintenance, other improvements are noted in the American Yarn, Inc., mill. New elevators have been installed here as well as in all other company mills. They are Park-made and of the double-safety type which means that the lock motion operates when any door on the shaft opens.

All stairways are re-inforced with a hard and extra-heavy treading made by Southern Friction Materials Co., and known as Cotton Leather. New floors have recently been laid, fluorescent lighting is used, and Pittsburgh Plate Glass Co's. dynamic coloring plan has been followed for mill interior and machines.

Instead of conventional wiring or cabling, the mill uses the Square-D plug-indulets which are ducts containing a copper tubular buss. The ducts may be conveniently tapped at almost any point, and they run the length of the mill, crossing at convenient intervals for proper coverage.

All pumps are new. A large, 12x11-in. Ingersoll-Rand compressor serves the Parks-Cramer Turbomatic humidifiers; and in the waste house there are new Worthington pumps for air lines, a new Abington pump for the vacuum system, and a new Beatty hydraulic press for baling waste. The boiler is a new Erie 75 hp., fully automatic, and fired by an Auburn stoker. This boiler serves the Carrier steam-coil heaters.

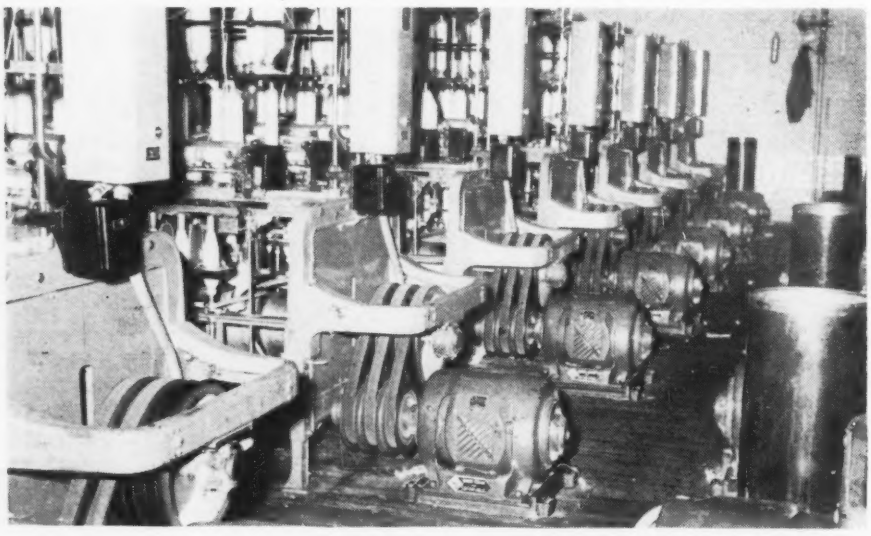


Fig. 6. The new Allis-Chalmers Vari-Pitch drive for spinning and twisting frames.

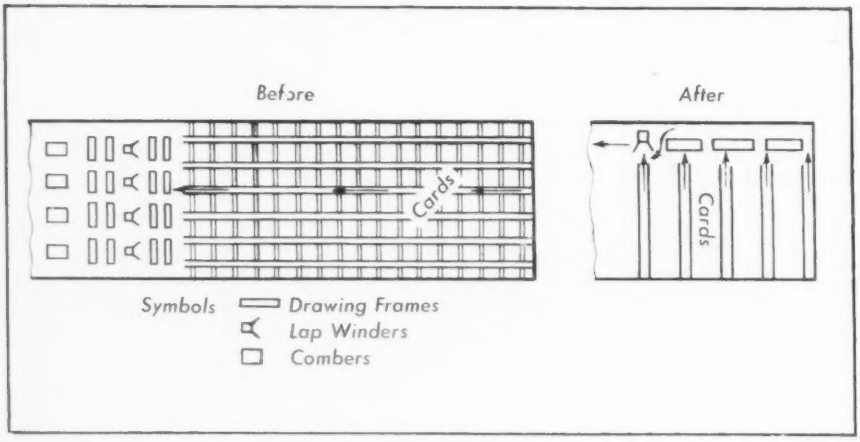


Fig. 7. Before (left), and after (right), of Woodlawn card room layout. Card alleys now run crosswise and drawing frames and lap winders are placed alongside the cards. Arrows show flow of processing.

ADRIAN AND MADORA MILLS. The Adrian and Madora mills illustrate the second phase of company modernization. Here no new processing machinery has been installed recently, but all machines have been gone over and re-equipped systematically during recent years in order to improve both operation and maintenance.

For example, ball bearings have been installed on beater shafts, evener-cone shafts, lap-winder headlocks, and on spinning and twister cam-shafts. Oilless bearings have been installed on the comber detaching rolls, drawbox rolls, and thimbles. They are also used on top rolls at the ribbon lappers and at the drawing frames.

Chain drives have played a promi-

(Continued on page 190)

Bibb Company Builds 160-UNIT VILLAGE For Housing Workers

The houses are all set back from the driveways to reduce traffic noise, and the slope of the grounds has been arranged so that drainage is away from all the buildings toward special outlets. The driveways are surfaced with sand and clay overlaid with a 4-in. thickness of packed gravel. Trees and shrubbery are to be placed about the grounds in a formal design to provide shade along the walks.

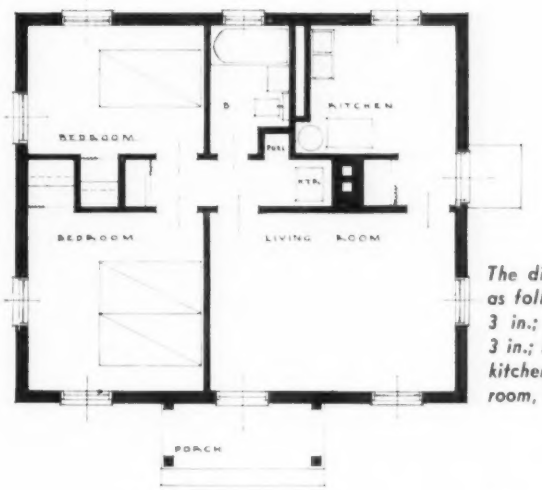
HIGHLIGHTS: *Individual brick houses each have four rooms and bath—New village is an adjunct to the acquisition some time ago of the Meritas Mills—Stove, refrigerator, water heater, and space heater provided for each house by the company.*

A NEW MILL VILLAGE, comprising 160 single-unit houses and known as Anderson Village, has been built by the Bibb Mfg. Co. on the outskirts of Columbus, Ga., for housing workers in its two textile plants located there. The houses are built of brick veneer over hollow tile, of a design known as modified Colonial; and each one contains four rooms and a bath.

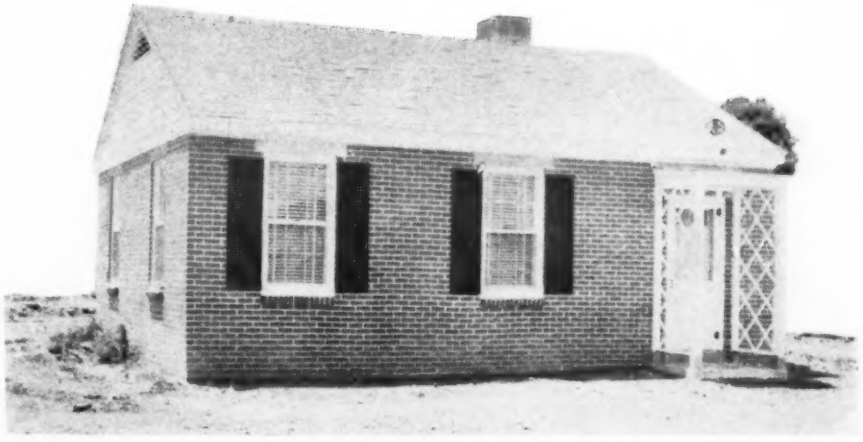
The construction of the village followed the purchase by the Bibb Mfg. Co. of Meritas Mills, which has been converted to the manufacture of rayon tire cord and renamed the Anderson Mill. Largely filling a gap of several blocks between the old village and the newly acquired mill, the new village in effect unifies the two mills and their housing facilities.

The dwelling units of Anderson village were designed for compactness and convenience. Fixtures installed in the kitchens include a refrigerator, gas water heater, and a gas range. A circulating, coal-burning heater, with a minimum capacity of 30,000 B.t.u. per hr., provides heat for each house.

Casein paint in a single coat was used on the walls and ceilings of the living room and the two bedrooms, while two coats of flat oil paint were used on the kitchen and bathroom. The outside woodwork of all the houses, including the frame construction of the upper section, was uniformly painted white.



The dimensions of the rooms shown are as follows: living room, 11 ft. by 15 ft. 3 in.; front bedroom, 11 ft. by 11 ft. 3 in.; rear bedroom, 8 ft. by 11 ft. 3 in.; kitchen, 8 ft. by 10 ft. 3 in.; and bathroom, 5 ft. by 8 ft.



Lumber used in weatherboarding the upper section of the houses consisted of short-leaf yellow pine. Each unit is provided with Venetian blinds and half-window screens. Houses were spaced so that ground would be available for individual lawns.

WOOLEN CARD-ROOM
Layout Reduces Costs

HIGHLIGHTS: *Mill of 12 cards can operate economically with 16 hands — An individual conveyor runs from each card to spinning.*

By GUSTAV ZELLNIK
Consulting Textile Engineer, Newburgh, N. Y.

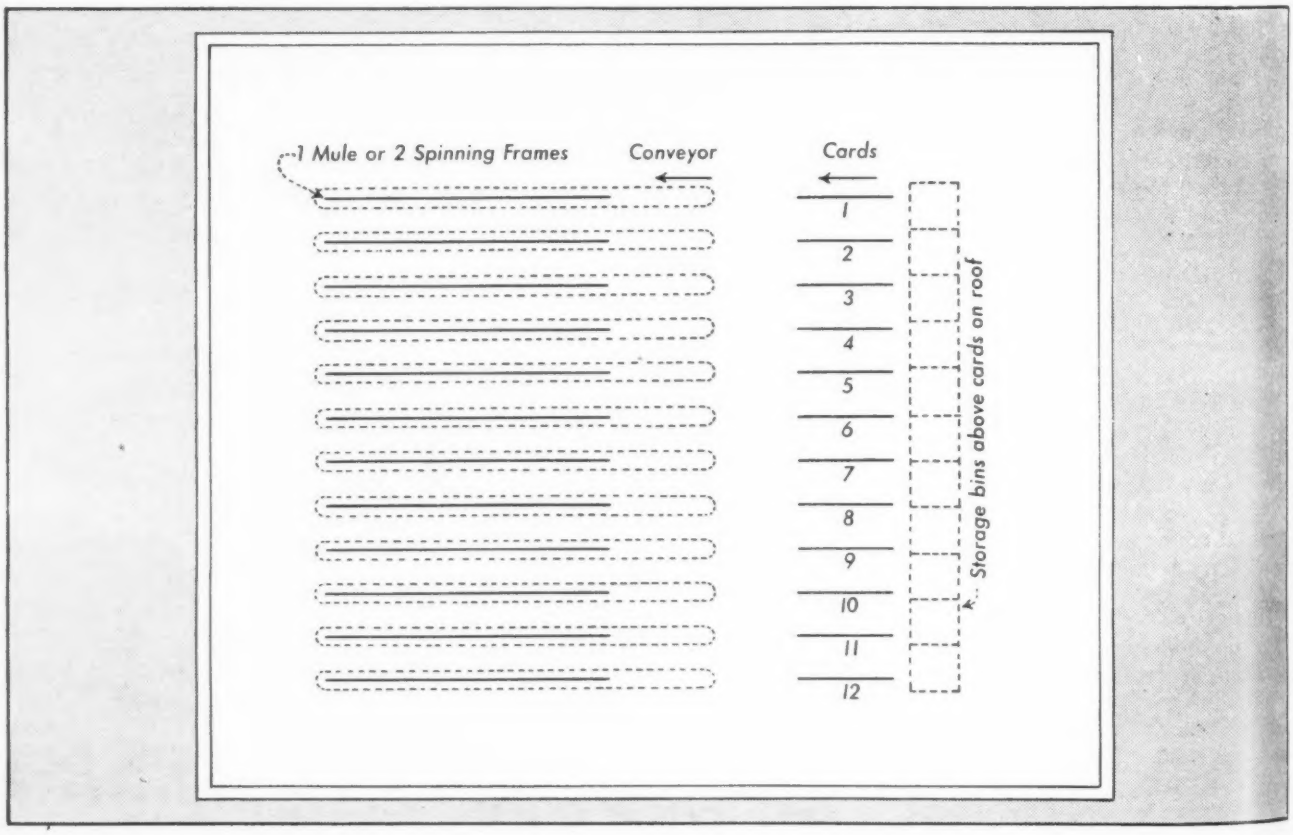
ORGANIZATION OF PERSONNEL for the carding department of a woolen mill designed to utilize wide woolen cards, that is, cards that are 72 in. and even 80 in. in width, in such a fashion that production costs are as low as possible without impairing the high standard of work quality, is outlined. These wide cards were described in an article by the author which appeared on pages 115 to 117 of the November issue of TEXTILE WORLD. Personnel requirements for a mill of 12 cards, based on the assumption that a slightly greater number in personnel is desirable from the standpoint of good supervision, are listed:

1 Boss carder
1 Assistant foreman
1 Repair man (also handles reclothing of cards)
1 Roving weigher
4 Front tenders (each worker handles 3 sets of cards)
2 Back feeders (each worker handles 6 sets of cards)
2 Alley men (each worker handles 6 sets of cards)
1 All-round man for odd jobs
2 Strippers
1 Stripper helper

Total—16 men for one shift.

SHIFT OPERATION. When two or three shifts are employed, the operating costs will be much lower because a good foreman can replace the high-salaried boss carder for shifts two and three. Then the repair man is not necessary for the second and third shifts because most repairs are normally made on the day shift under the supervision of the boss carder. Naturally, it is a matter of organization whether more stripper operators are used in the daytime than at night. It is the suggestion of the author that each shift have two strippers and one helper, thus requiring nine men for three-shift operation. It may be possible to have five men on the first shift and two men on each of the other shifts, but these are minor items that have to be organized by the boss carder.

The so-called all-round man has to help during stripping, or when needed to help the repair man; also, when one of the front tenders or one of the back feeders does not come to work,



he can replace him. With such a set up, the department is prepared to run continuously, even if it is short a man.

If vacuum stripping is introduced in a mill, this operation should make stripping easier. There are still contradictory opinions about vacuum stripping in the industry. It is up to each mill management to know what is most suitable and the cheapest for his mill.

Every woolen manufacturer can figure for himself the wage scales, and he will be surprised how low the basic carding costs are with this set up.

The production figures given in Table IV, appearing on page 117 of the November issue, were based on a 90% and a 85% efficiency. These figures are on the safe side and allow time for stripping and oiling and also for putting on card clothing. Reclothing of cylinders and doffers does not occur often, and reclothing of workers and strippers will not interfere with production because a dummy roll can be added to take the place of the worker or stripper that is being reclothed.

CARD ROOM LAYOUT. Suggested layouts are given for two modern card rooms. Many mills which are now considering the building of plants are having the plans drawn around the machinery so that the mill will be built about a good card-room layout. In other instances the mills already have the buildings and the machines must be arranged as well as can be managed.

The card room plan shown in Fig. 1 has been developed as a layout which may be incorporated in the plans of any mill that intends to build or that has the available space. In this instance, room dimensions have been considered only to the extent that the ideal layout was first made and the room then made large enough to house it.

The cards are lined in one direction. Above the cards are bins in which the blend is stored and from which the stock is gradually fed into the feed box. By having two back tenders for 12 sets of cards a machine is never stopped, even when one of the back feeders has to leave the room. Conveyors are located at the front of each card and lead directly to the mules or spinning frames, thus replacing the roving carrier. The advantage in having conveyors is not in that they eliminate the services of a roving carrier, but that they prevent mix ups which might happen when two cards side-by-side are running white or the same colored blends.

The front tender, after having the roving spool checked by the weigher, puts the spool on the conveyor in front of the tape condenser for transportation to the spinning frame.

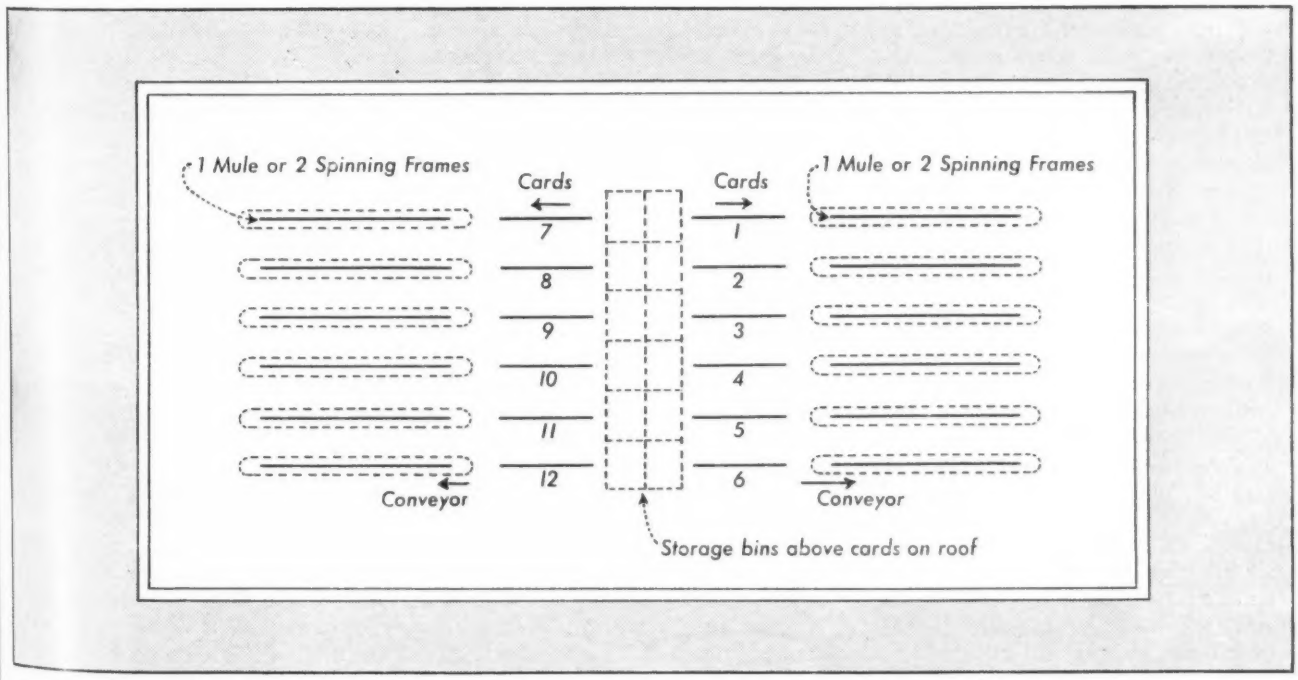
When the room is too small to permit the layout shown in Fig. 1, a layout similar to that given in Fig. 2 may be used. When the room size makes it impossible to have the cards in one row, the cards may be so placed as to have the feed boxes in the middle of the room. The advantages of this layout are that white or light-colored blends can be run in one section of the card room and dark colors run in the other side. This is possible because better control is had over card fly by having the cards divided into two groups, as shown in Fig. 2. In this instance also conveyors carry the spools to the mule or the spinning frame.

There are many possibilities in properly laying out a card room, not only in regard to safety precautions, but for streamlined production which can be synchronized in such a way that the help have more time to watch and check the quality of the work being run.

Many card rooms have sheet-metal walls between each card in an effort to eliminate card fly blowing from one machine to another. Many other precautions can be taken to make the quality as good as humanly possible. In spite of all these precautions, shortcomings will occur; hence the main thing for the manufacturer should be to eliminate as much as possible mistakes caused by the human element.

Fig. 1. Ideal card-room layout has all cards in a row so as to produce a straight-line production flow between carding and spinning. Room is humidified and air-conditioned.

Fig. 2. Possible solution for card room which does not permit having all cards in one row. This arrangement offers ideal control when cards 1 to 6 and 7 to 12 are operating on two different blends. Room is humidified and air conditioned.



ALGINATE "RAYONS"
Are Distinctive New Fibers

***HIGHLIGHTS:** — Various types can be produced in manner similar to viscose rayons—None will burn and some are quite soluble—Strength is around 2 grams per denier—British interested as use for seaweed—Commercial production not foreseen immediately.*

By P. RIPLEY

Possibilities of alginate rayons are so varied that no one can predict just how they will be used commercially—if at all. An obvious use, of course, is as unburnable curtains. A less obvious use for the soluble alginates is as a "carrier" thread for achieving extremely fine fabrics. Another limited use is foreseen in a patent granted for manufacturing a spiral (corkscrew-like) yarn by wrapping a thermoplastic yarn, such as nylon, around a central thread which is removed after the thermoplastic yarn has been set.

JUST HOW ALGINATE FIBERS—made from seaweed—will be developed for the textile industry is still not clear, despite many apparently precise statements that have appeared, principally in England. Two main influences are at work: (1) the British Government's resolve to use vast sources of native raw materials hitherto neglected and (2) the decision of Courtaulds, Ltd., to press alginate fibers to the maximum industrial outcome along conservative lines.

The development of alginate fibers is mainly associated with Prof. J. B. Speakman of Leeds University, where much of British textile research is at present concentrated. The first authentic announcement upon the subject was made in 1940. It was then stated that after extracting alginic acid from seaweed, the alginic acid solution could be extruded through spinnerets into a suitable coagulating bath.

The manufacturing process, in fact, largely follows that employed for rayon; and the British tendency is to refer to the fiber as "alginate rayon". But as alginic acid and the simple alginates are soluble in soap and soda solutions, the new alginate rayons consists of metallic alginates which are resistant to alkalies. The metallic alginate originally preferred was the beryllium salt, but there have lately been signs of other preferences, notably a chromium type.

NON-INFLAMMABLE. Although initial fabric woven from early alginate rayon possessed distinctive qualities—non-inflammability, for instance—it could scarcely be looked upon as having outstanding competitive merits. But as the number of possible yarns is limited only by the number of those metals which, without affecting discoloration, give insoluble salts with alginic acid, it was evident that improvements in the yarns could only be a matter of time. Little was published during 1941, 1942, and 1943 upon alginate fiber developments, excepting British patent No. 545,782, which gathered up the results attained to date. It was known, however, that the fiber was tried for certain war purposes and that a good deal of experience had been gained.

Speakman and N. H. Chamberlain, writing in the *Journal of the Society of Dyers & Colourists* remarked that rayon of satisfactory appearance, handle, and strength may be obtained by extruding a solution of sodium alginate into a coagulating bath containing calcium chloride (N), hydrochloric acid (0.02 N), and 2.5% by volume of olive oil emulsified with a suitable agent. (The agent mentioned as an example is Lissapol C, a product of the Imperial Chemical Industries.) No difficulty was encountered in producing yarns with a strength of 2.0 grams per denier per filament. This represented a considerable advance over the results obtained in 1940.

Another article in a subsequent issue of the *Journal* by the same authors plus A. Johnson, who is Courtaulds' expert in charge of alginate yarn developments, covers much the same ground. But there is a departure in that account should be taken of a number of alginate rayons, all highly hygroscopic. It was stated that there is a considerable hysteresis between the adsorption and desorption isotherms of calcium, aluminum, chromium and beryllium alginates at 25° C. Unlike calcium alginate rayon, which is soluble in a solution of soap and soda ash, the chromium and beryllium rayons are only slightly weakened by treatment with the solution for 30 min. at 25° C. or 40° C. Nevertheless, the extensibility of the last two rayons is much too low to permit of their successful use in weaving and knitting.

SPINNING PROBLEMS. It was at first proposed, in the spinning of alginic-acid or metal-alginate, to coat the filaments with oil during or immediately after coagulation, before they had an opportunity of adhering together. Various emulsifying agents were specified as being suitable for this purpose. It has been found, however, that this practice interferes with the subsequent proper treatment of the thread. Therefore, it was advocated that the oil be dispensed with and a small portion of a wetting-out agent substituted. This could be either cationic or non-ionogenic in character. Instances of such compounds are lauryl pyridinium sulphate, cetyl pyridinium chloride, and the non-ionogenic water-soluble compound obtainable by the action of tethylene oxide on an aliphatic alcohol or acid containing more than eight carbon atoms in a chain. This development was covered

by Courtaulds in British patent No. 567,841.

The registration of this British patent was soon to be followed by another—No. 568,177—elaborating a practice which is a logical furthering of the principle referred to above; namely, the elimination of oil from the treatment of threads. But on this occasion, instead of employing the remedial wetting-out agents as specified in the earlier patent, it is proposed to take action through the spinning process itself. A solution of sodium alginate is to be spun into a bath containing a salt of alkaline earth, such as calcium chloride; a small quantity of cation-active compound, such as cetyl pyridinium chloride; and a small portion of an organic acid, in the substantial absence of free mineral acid.

The method of spinning employed in this second patent is also modified otherwise, but the modifications as a whole are not fundamental, excepting in so far as they refer to the new method of dispensing with oil. But it is interesting to notice also that there is reference to a stretching of the thread (37%). Hope of great improvement in the strength of alginate rayon by the employment of stretch-spinning methods has been entertained from the outset.

MORE RESEARCH. Experimenters handling alginate yarns insist that there is no intention of making them available to manufacturers before research has been carried still further. But a specimen fabric has been exhibited in which alginate yarns were used as a carrier for very fine single worsted and woolen yarns which otherwise would not have stood the weaving process. It is impossible to express an opinion upon the future of this cloth, since durability tests have yet to be made, and, as far as clothing is concerned, proof will have to be afforded that alginate yarns can weather well. Moreover, in the exhibit shown, the alginate yarn was claimed only as a temporary supporting medium, which could be dissolved from the material, leaving only a woolen and worsted cloth. The cloth is exceedingly light—1½ oz. to the square yard—and, other things being equal, it might meet an important need in the British climate, namely, the provision of warmth without weight; but, in any event, as already noted, alginate yarns would provide only a subsidiary and introductory part. It should perhaps be added that those in closest touch with developments are confident that pure alginate rayon fabrics will have a great future for furnishings.

Alginate Fibers Compared

By C. K. TSENG

MOST PEOPLE do not know that a good deal of research on the processing of algin and on the virtues of alginates as textile fibers has been carried on since 1940 by a branch of the British Ministry of Supply. For instance, it has developed an alginate cloth just as strong as and, in some respects, better than jute. Unfortunately for alginate textile fibers, large quantities of jute were again available just when large-scale production of alginate fibers was to have been started. With few exceptions, therefore, alginate fibers are still in the experimental stage; and commercial product has not yet begun.

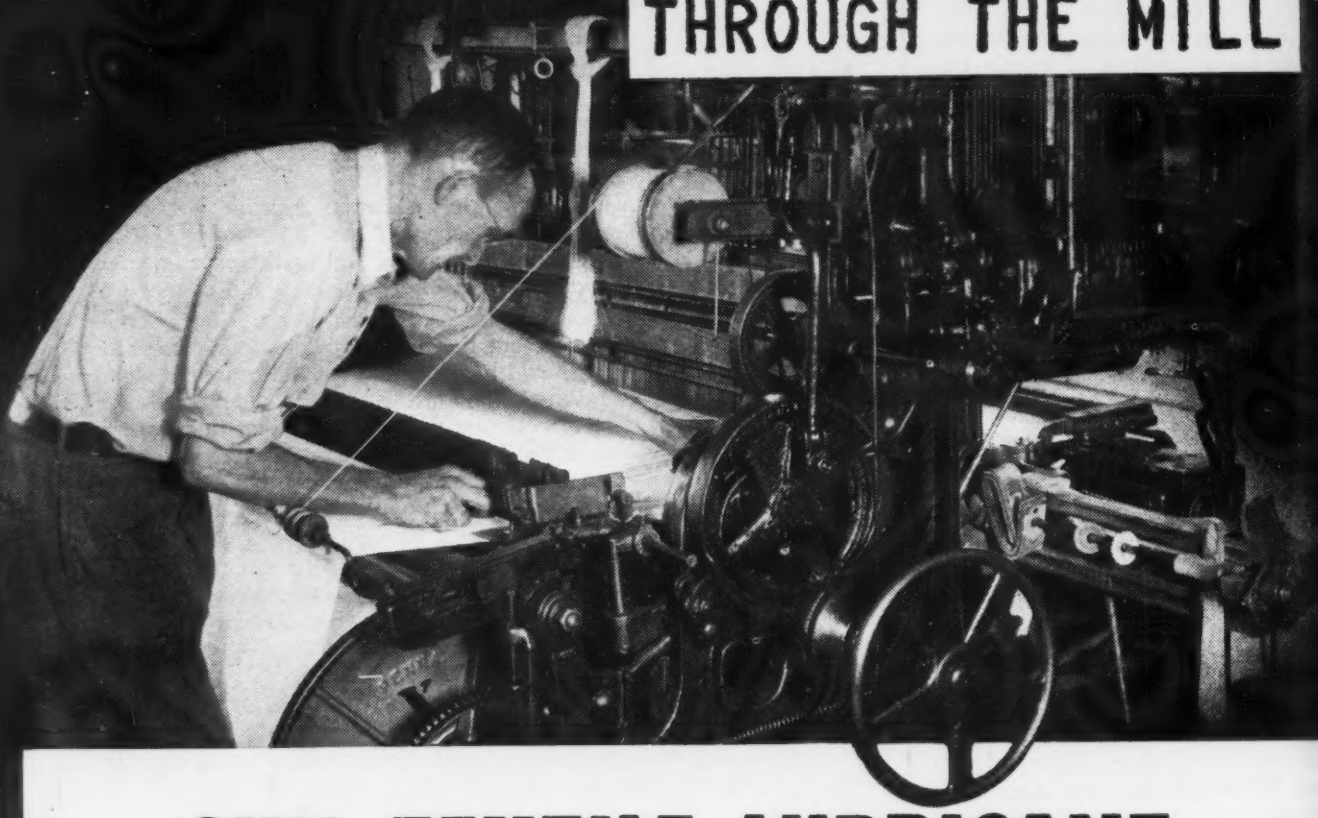
Very little has been done in this country on alginate fibers. One company tried to make some, but the product did not compare with the British. Of course, it should be admitted that the American algin industry is directed toward the food industries more than anything else. Also, the algin people in this country do not believe that they have a chance to compete with other better-known synthetic textile fibers. But perhaps there is a place for alginate fiber in the textile industry for special uses because of its solubility in alkali solutions and its non-flammable qualities.

The condensed information in the accompanying table shows the characteristics of the various fibers. Since there are several different kinds, one should make a difference between calcium alginate fibers and others, rather than designate all these as one type, thus making "alginate fiber" synonymous with "calcium alginate fiber." It is possible that calcium alginate will be the stock material from which beryllium and chromium alginate fibers are to be made.

The Japs and Russians have also paid some attention to the alginate fibers during the few years prior to the outbreak of war.

	Alginic acid	Calcium alginate	Aluminum alginate	Chromium alginate	Beryllium alginate
Metal content	0.1% ash	10.38% Ca	3.30% Al 5.50% Ca	1.53% Cr 8.29% Ca	2.98% Be 4.91% Ca
Specific gravity	1.627 (dry) 1.558 (conditioned)	1.779	1.773	1.780	1.735
Tensile strength (grams per denier) r.h. 0	2.00	2.18		2.02	2.80
r.h. 65%	0.50	1.14		0.99	1.56
r.h. 100%	Too weak to determine	0.29		0.68	1.08
Extension at break (%) r.h. 0	9.7	10.1		5.6	3.9
r.h. 65%	4.3	14.3		4.2	5.2
r.h. 100%	To weak to determine	25.7		4.5	3.2
Water adsorption r.h. 63.8%		20.4	28.5	29.1	24.9
r.h. 100%		51.9	54.5	61.8	53.0
Effect of heat	Will not burn	Will not burn	Will not burn	Will not burn	Will not burn
Effect of alkali	Dissolves	Dissolves	More resistant. Dissolves in 1 hr.	Highly resistant	Highly resistant
Effect of age	Deteriorates greatly after about 130 days	Stability increased with increasing pH		Improved during storage at 65% r.h. and 22.22°C.	Improved during storage at 65% r.h. and 22.22°C.
Remarks		Easy to weave, usefull as stock material	Not satisfactory	Necessary degree of alkali resistance for general use, but too highly colored	Necessary degree of alkali resistance, not colored

ONE OIL THAT'S BEEN THROUGH THE MILL



SUN TEXTILE LUBRICANT . . .

Ends Lubrication Worries; Aids in Fast, Smooth Weaving; Eliminates Spotting and Drippage

A prominent eastern textile mill ran into trouble four years ago with loom-lubricants. Although they had tried several different brands of straight lubricating oils, there was always considerable drippage and spotting.

Fabrics were spotted; floors were slippery and dangerous.

When a Sun Engineer was called in, he analyzed the situation, recommended a Sun Oil specially refined for its adhesive properties.

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Sun Oil Company is one of America's oldest, largest, and most progressive manufacturers of oils and greases. In the textile industry, Sun Engineers have made a detailed study of lubrication and processing-needs, have developed a complete line of quality petroleum products to meet those needs. For good service, good products, call the Sun office near you, or write . . .

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OILS FOR AMERICAN INDUSTRY

RESEARCH Sole Hope for Cotton's Survival, CTI Is Told

HIGHLIGHTS: *Large capital investment in ultra-efficient machines will be bulwark against low-wage competition, says Callaway—Stronger, more stable industry forecast by Murchison—Customers agree up to now "synthetics steal the show."*

MOVEMENT TOWARD a textile industry in which "large capital investment rather than low wages is necessary to produce textile products economically" was pictured by Fuller E. Callaway, Jr., at the annual meeting of the Cotton-Textile Institute in New York, Nov. 28, as the best means for defense against the impending threat of foreign competition.

Mr. Callaway, retiring chairman of the CTI board, appealed for intensive research, not only by organizations set up for that purpose, but by every individual manufacturer to the end that high-efficiency and high-cost machinery be made the basis of production. On a direct wage basis, Mr. Callaway showed that textiles made in the U. S. will have scant chance against those made in Europe and the Orient. The only alternates he sees to prompt and effective technological improvement are high tariffs or reduced wages, neither of which he regarded as likely. With current low interest rates and still unimpaired capital, he was hopeful of the fruitful results of research.

NEW ERA. The idea of a coming new era of scientific development was reflected in the majority of the addresses before the cotton mill men, with especial emphasis on the research which must be done to keep up with the rapidly changing picture.

Virgil Jordan, president of the National Industrial Conference Board, carried the idea further by contrasting the mechanical age, which the so-called Industrial Revolution brought into being, with the chemical age, which was barely realized until "the atomic bomb burst upon our consciousness a few weeks ago."

"The age of electronic alchemy in which we live today," said Dr. Jordan, "means essentially that it is now potentially possible to make anything—materials, machines, and energy—out of anything or almost nothing, anywhere in the world, in any amount, at a rapidly diminishing cost in terms of time and labor . . . The magic that surrounds the alchemy of modern industry seems to have released men's minds from the spell of age-old ideas of scarcity and sacrifice, effort and thrift, and to make them concerned for the first time in history with the problem of consumption."

Dr. Leo Wolman, of Columbia University, challenged the idea which is being promoted in some circles that wages are not a part of cost and that they may be changed without affecting cost. He said that this theory was rationalized by the idea of increasing efficiency, but he argued that overall gain in efficiency was slow business, increasing from 1899 to 1939 by only 1½% per year. He deprecated the lack of policy in government and the substitution of subterfuge for frankness in high places.

STABILITY SEEN. Dr. Claudius T. Murchison, president of CTI, stressed the conditions of increasing stability which he sees in the industry, including relatively low prices and the trend toward integration of processes.

"The outlook is definitely along the line of a stronger and more stable industry," he said. "This, together with the great improvements which will be coming to us from science and the arts, should enable cotton not only to hold its own but to make great strides forward . . . an industry of continuous and growing prosperity."

At the textile research and education forum held in conjunction with the annual meeting, no less than 10 specific applications of electronics to textile manufacturing were disclosed by R. J. de Martini, textile engineer, General Electric Co. These applications were warper-tension control, synchronization of two or more machines, slasher controls, loop control, constant rate of load tester, seam detector, liquid-level control, spectrophotometer, yarn-diameter recorder, and weft straightener.

At the same forum, which was conducted by Fuller Callaway, Ward Delaney told the activities of the Institute of Textile Technology and Dr. Harold DeWitt Smith of the Textile Research Institute. A talk scheduled on the developments of textile education was cancelled.

RAW COTTON FORUM. At a forum on raw cotton, Congressman Stephen Pace analyzed the industry's problems as arising from lack of adequate research in cotton. "The problems of growing and processing cotton," he said, "lie in the same fields of scien-

(Continued on page 194)

Customers Air Their Complaints

At the forum entitled "Customer's Report to the Cotton-Textile Industry," with D. B. Tansill of Pepperell Mfg. Co. as chairman, J. D. Lippman, of Textileather Corp., said that the biggest and most important development in the coating industry had been the expansion of resin or plastic coatings. He complained that his industry was receiving currently only 30% of its fabric requirements since looms had been diverted to more profitable items.

Warren S. Lockwood, of the Rubber Manufacturers Association, said it was important, in view of the gain in synthetic yarns, that cotton fabrics should be properly engineered. "The cause of the cotton-textile industry can be seriously damaged," he said, "if it fails to give full consideration to research and cooperation."

L. R. Hill, of Westinghouse Electric Corp., stressed the fact that long-term trends indicate gradual replacement of natural fibers by synthetic materials. A. T. Bard, of Reliance Mfg. Co., pointed out that synthetics had "stolen the show" in the garment field, but it was not too late to do a selling job to the consumer on the serviceability of cotton fabrics.

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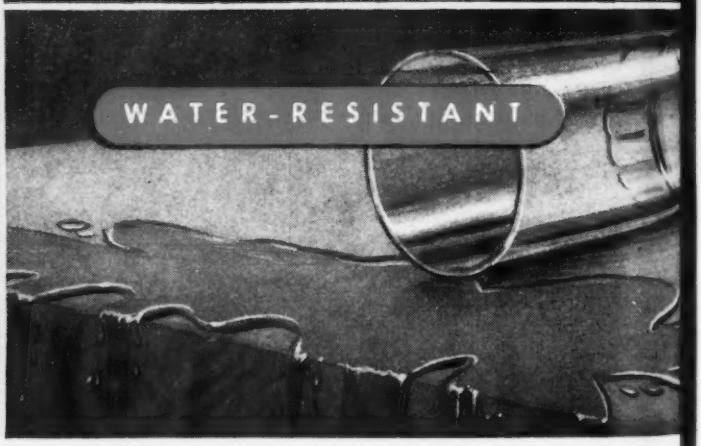

Vita-Clor Finishes will make natural and synthetic fibres, or their mixtures

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EVAPORATIVE COOLING
System Installed at Utica

HIGHLIGHTS: *Combination cooling, ventilating, and humidifying system for spinning and weave rooms utilizes air-changing equipment in connection with atomizers.*

By EARLE MAULDIN
Southern Editor, TEXTILE WORLD

IN A NEWLY-RENOVATED four-story cotton mill at Seneca, S. C., now being operated as the Seneca Div., Utica-Mohawk Cotton Mills, Inc., an installation of a combination cooling, ventilating, and humidifying system has recently been completed by the American Moistening Co. This equipment has stood the test of the late summer heat of this year with promising results.

Installations of this type were installed by the Lonsdale Co. at its Blackstone Mill, North Smithtown, R. I. and its Berkeley Mill, Berkeley, R. I. Illustrations are of the spinning room and the weave room of these plants, as the equipment is practically the same as that at Seneca. Conditioning equipment for the Seneca plant was first purchased by Lonsdale, but this company recently sold the mill to Utica Mohawk Cotton Mills Co. before it had been installed. Accordingly, the equipment and installation, as contracted for by Lonsdale, was put in for Utica.

CONDITIONING UNITS. The four-story building at Seneca is 130 x 310 ft. with story heights of approximately 15 ft. each. Brick side-walls, large windows, floor and roof construction of timber, insulated ceiling for top story, and tar-and-gravel roofing, comprise the principal construction features.

Design data used in computations to arrive at proper installation of equipment included the lighting load; number of people employed; heat generated by machinery and motors; heat conducted by walls, ceilings, and windows due to temperature differences; solar heat transmitted by windows, roof, and monitors; and the outside and inside differences of temperature and relative humidity. In the case of the weave room, temperature and humidity were assumed to be as follows: Inside—dry bulb 80°, wet bulb 76.2°, RH 85%; Outside—dry bulb 96°, wet bulb 72°, RH 31%.

It was decided to utilize evaporative cooling in the two large and two small spinning rooms and also in the two weave rooms. Provision has been made for extending the system to provide cooling in the card room and in the warping and winding departments when desired. These sections are provided with atomizers only at this time

(Continued on page 184)

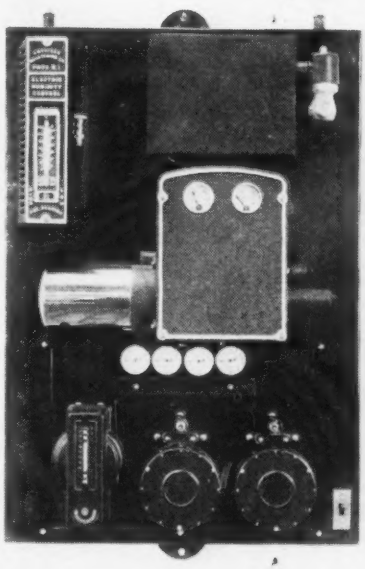
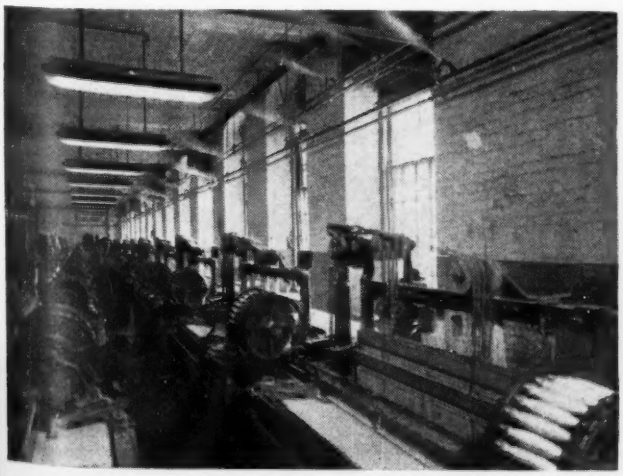
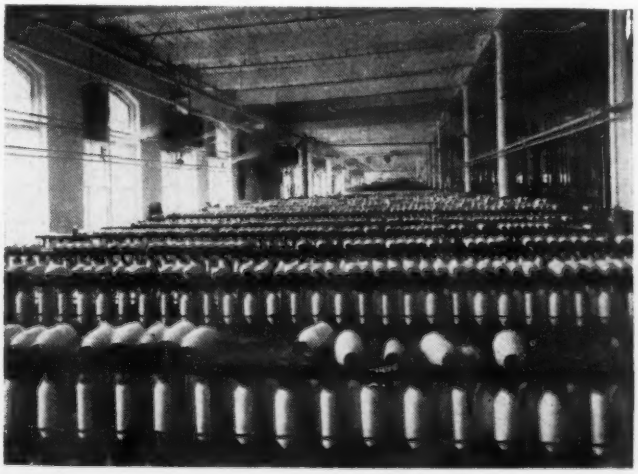


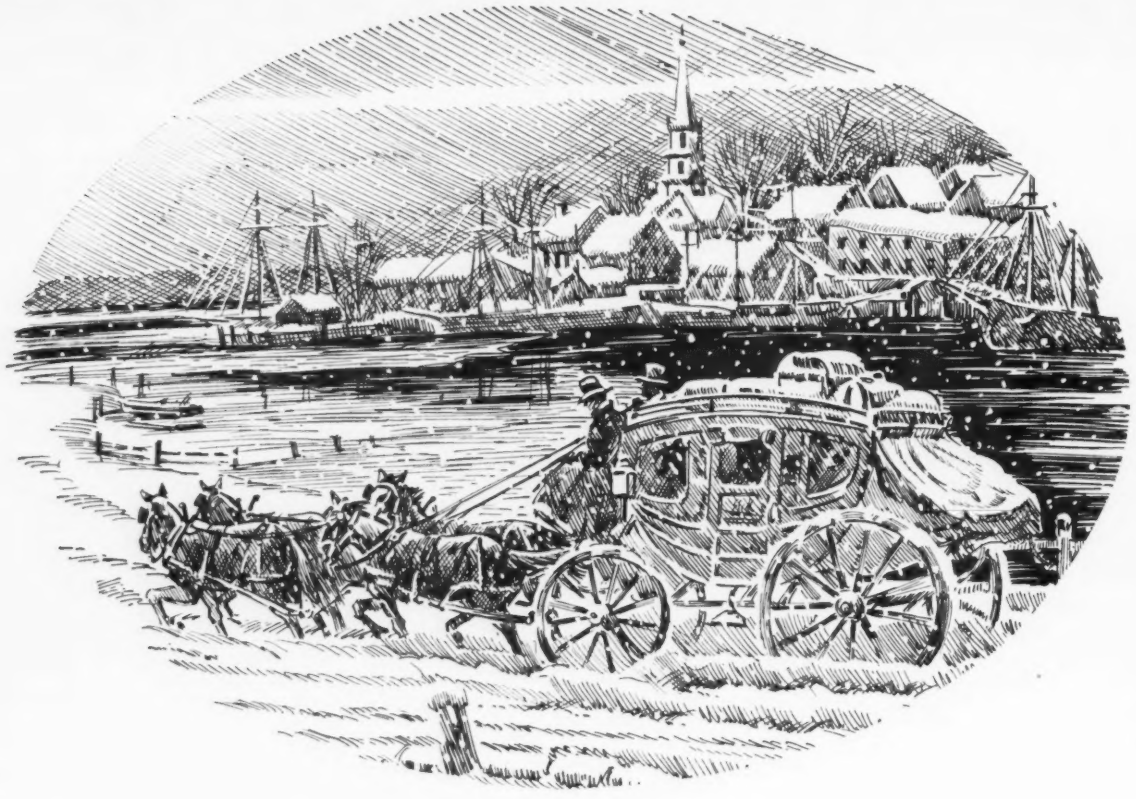
Photo courtesy American Moistening Co.

Cooling and ventilating master controls, such as the one illustrated, are located throughout the spinning and weave rooms at Seneca to operate the dampers, regulate air flow, and to prevent the introduction of too much outside air which might vary the relative-humidity conditions.





(Left) General arrangement in the weave room at Lonsdale's Berkeley Mill shows cooling and ventilating units located in the top section of every third window, while units between these are re-circulating dampers which are automatically controlled. Two sets of air and water lines are employed, atomizers being operated from both lines but staggered as to position. (Right) The spinning room of Lonsdale's Blackstone Mill has had a conditioning system installed which is similar to that in Berkeley Mill's Weave room.



—back in 1820: When the Public Debt was less than 67 million dollars and there was not a mile of railroad in the United States — 24 years before the Mercerizing Process was discovered — John Butterworth established this business in Philadelphia to serve the Textile Industry. . . .

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Textiles Bring HIGH PRICES In Mediterranean Countries

HIGHLIGHTS: *Woolen cloth sells for $50 to $100 per yd. on the black market in France—Smart dress goods woven from dog's hair—The Italian textile industry is believed to have suffered only 5 to 10% damage during the war—Textiles stolen from sleeping soldiers.*

By WILLIAM G. ASHMORE, *Major, Infantry, U. S. Army*

Former Southern Editor of TEXTILE WORLD, looking at the European and African textile situation, says:

"Herewith are a few personal observations on the textile industries of some of the European-Mediterranean countries which may be of interest, as I assume little first-hand information has been available in the States since the beginning of the war. As you know, I have been in the European-African Theater since the summer of 1942, nearly 3½ years now, and have made the circuit with our armies from the United Kingdom through Morocco, Algeria, Tunisia, Sicily, Italy, and France to the German border. Although much of this time was spent in the field with troops, I have had several staff assignments which required considerable travel and contact with civilian industries, and incidental to my official duties I have tried to find out what I could about the fate and future of the textile industries of these nations and the effect of war on the general economy. Before discussing textiles specifically, I should like to give you a little of the background as I have seen it. You understand, of course, that there is nothing official in the following comments, which represent my own views, largely based on personal observation and conversations with European business men."

EUROPE, THE MIDDLE EAST, and parts of Asia and Africa should offer tremendous new markets to the American business man for many years to come, despite inflation, war damage, misplaced persons, and the general confusion which is the aftermath of war.

Most of these sections have been stripped of everything in the nature of consumer goods, especially clothing, shoes, foodstuffs, pharmaceuticals, and raw materials of all types. Shortage of transportation and coal curtails such production as is available. Even countries untouched directly by war, such as Switzerland, are short many necessities and luxuries.

Vicious black markets flourish everywhere, offering a measure of goods of all types, especially food, clothing, and petroleum products. The profits are so great that there have been instances of trains wrecked and robbed, trucks hi-jacked, and occasionally armed banditry. The foregoing is understandable when it is realized that in France an average suit of clothes sells for several hundred dollars and shoes for nearly as much, on the inflated markets. It is not unusual to see woolen cloth selling for $50 to $100 a yard. A truck load of sugar in Italy is worth $10,000. Coffee brings $30 a pound in France. Sheets and mattress covers sold at $20 each in Africa at times. Arabs would crawl into tents at night and steal clothes from sleeping men.

FIBERS LACKING. Raw materials of all types are either non-existent or very difficult to acquire. For example, in southern France I saw a small mill actually weaving rather smart dress goods from dog's hair. Available textile fibers are diluted to the maximum in all mills, and garments disintegrate very quickly. I saw an Italian-made bathing suit come to pieces the first time it was worn in the water. At one time, socks were among the most sought-for items in the European-African Theater, as it was common practice to unravel them and re-knit the yarn into other garments. The same thing was true of nylon shoe laces which were unraveled and made into women's hosiery.

Undoubtedly, the black markets will gradually disappear as supplies become available, and prices will decrease if inflation is kept under control; but it will be many years before France and Italy can supply their domestic demands, much less the needs of the North African colonies.

The most serious problem in the reconstruction of Europe, aside from the immediate requirements for food, clothing, and fuel, is the problem of dollar credit. Inflation was controlled to some extent by the Allied Forces in North Africa and Sicily, and to a lesser extent in Italy, by the process of outlawing the currency in use and issuing special occupational francs or lira. This procedure was not feasible in France because of its status as an Ally rather than a defeated country.

(*Continued on page 196*)

Textile production capacity and population of the Mediterranean area.

Country	Spindles (millions)	Looms (100,000)	Lb. cloth produced (millions)	Bales cotton produced (100,000)	Population (millions)
Italy	5.30	1.30	353	8.0	41.2
France	9.80	2.00	500	15.0	41.8
Spain	2.00	0.70	160	5.0	23.6
Yugoslavia	0.19	0.12	49	0.8	13.9
Greece	0.31	0.08	21	0.9	6.2
Turkey	0.24	0.04	36	1.3	16.2
Total	17.84	4.24	1,119	31.0	142.9
Total population of countries having no textile industry (Morocco, Algeria, Libya, Egypt, Arabia, Palestine, Iraq, Syria)					41.2
Total Mediterranean-area population					184.1

Lb. cloth produced per yr. per capita

Mediterranean area	6.08
United States	30.08

TESTS PROVE QUADRAFOS SCOURING YIELDS BETTER WHITENESS——

Also Stronger Yarns...on All Types of Wool

Here are the highlights of remarkable results—results of conclusive research by Rumford Chemical Works carried through on pilot plant scale — confirmed by textile manufacturers and commission scourers in the field:

QUADRAFOS Scoured Wools Superior in Whiteness, Openness

Scours with QUADRAFOS produce brighter, loftier wool of superior handle and little or no odor as compared with wool scoured with soap and soda ash only . . .

Great Increase in Removal of Residual Grease with QUADRAFOS

Impartial commission scourers substantiated the impressive effect of QUADRAFOS upon residual grease . . . *ether extraction decreased from 0.5% to 0.1%* on wool for the worsted system . . .

QUADRAFOS Reduces Soap Requirement 25% to 50%

Exhaustive field study showed that the use of from 10% to 25% of QUADRAFOS . . . calculated on the original weight of the soap in normal soap and soda ash scours . . . will reduce the soap requirement by a quarter to half . . .

Spectrophotometer Tests Prove QUADRAFOS Increases Whiteness

Pads felted from card lap and tested for reflectance showed QUADRAFOS increases whiteness of Cape wool by 11.8% and Texas by 6.7% . . . scientific proof of the obviously superior whiteness of QUADRAFOS scoured wool . . .

QUADRAFOS Scoured Wool Provides Measurably Stronger Yarns

Tests on Cape wool scoured with and without QUADRAFOS, run on a standard Scott tester, clearly showed the yarn made from QUADRAFOS scoured wool *consistently 13.2% stronger* than yarn made from the same wool scoured with soap and soda ash alone . . . due to the superior carding properties of QUADRAFOS scoured wool, which yields a higher percentage of long staples.

QUADRAFOS Increases Profits Two Ways

QUADRAFOS (Sodium Tetraphosphate — $Na_6P_4O_{13}$) the special assistant for textile wet finishing, holds great promise of profits for textile manufacturer and commission scourer alike. For the former, the advantages of stronger yarns produced by economical QUADRAFOS scouring are obvious. For the scourer, production of measurably brighter, whiter wools of lower grease content will build business as never before.

QUADRAFOS Granular — a white, free-flowing powder . . . dissolves readily in hot or cold water and may be added direct to the processing operation.

QUADRAFOS Beads — recommended for preparation of stock solutions. Easily scooped or poured from bulk containers. Also available in handy cotton dissolver bags.

The Rumford Technical Service Department is ready to supply detailed information on the efficient application of QUADRAFOS to kier boiling, bleaching, dyeing, sizing, scouring and many other processes.

Write Rumford Chemical Works, Technical Service Department, 11 Newman Avenue, Rumford 16, Rhode Island.

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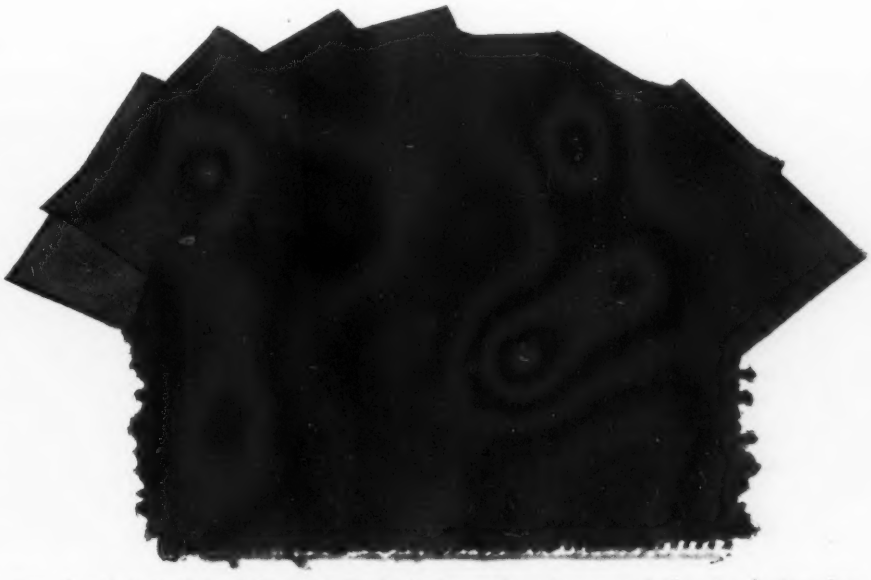
STANDARDIZED COLOR CARD of Home Furnishings Branch

HIGHLIGHTS: *Formation of Home Furnishings Style Council completed to handle newly developed color card for standardization of colors and nomenclature—Card is intended to assist in matching colors and aid in sale of textiles for the home.*



Carpet-swatch dyed in Adirondack G, basic burgundy color, one of the nine basic colors established by the newly formed Home Furnishings Style Council. The group of color cards shows the gradations in the burgundy group, each of which being identified by a letter; reading from left to right variations range from Adirondack A (the lightest) to H (the deepest). In this color range G happens to be the basic color, while with other hues the basic color may appear elsewhere in the range and carry some other letter designation.

COORDINATED ACTION by the home furnishings branch of the textile industry and its allied groups in acceptance of a basic home furnishings color chart involving some nine hues and eight graduated values of each hue culminated at the meeting of the Institute of Carpet Manufacturers of America, held recently at the Waldorf-Astoria Hotel, New York, by the establishment of the Home Furnishings Style Council.

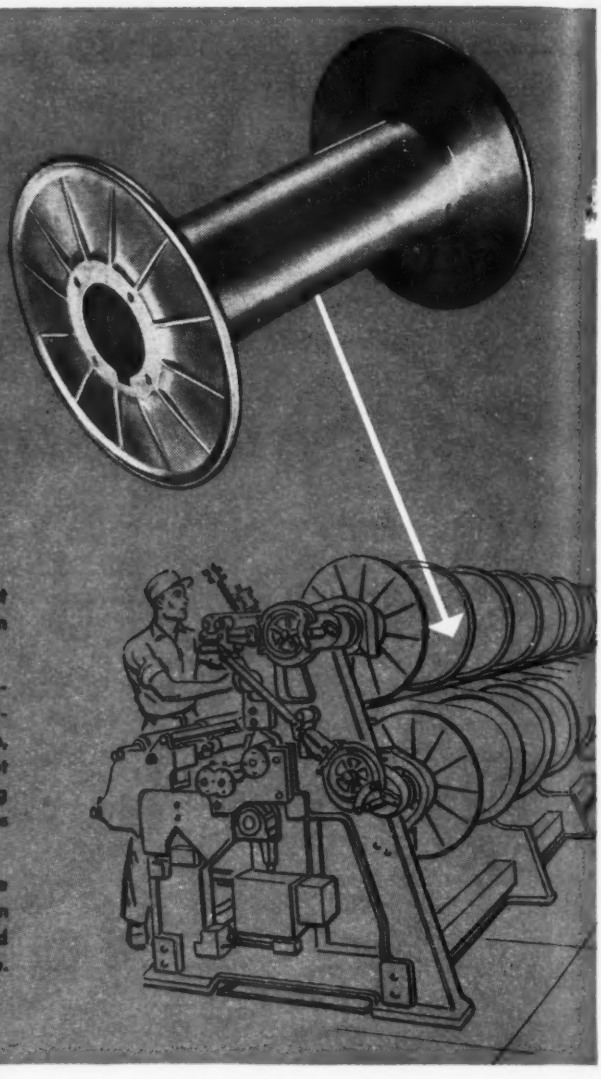
This council, a voluntary association to promote the coordination of color in home furnishings, represents the results of two years research by color specialists. The colors in this basic home furnishings color card are named after geographical locations with the following color designations: tan group is called Alamo; rose group, Grand Canyon; burgundy group, Adirondack; mauve group, Prairie; green group, Shenandoah; beige group, Cape Cod; blue group, Great Lakes; cedar group, Santa Fe; and the gray group, Great Smoky.

Use of the standardized colors and nomenclature is left entirely to the carpet mills, upholstery and drapery producers, and other manufacturers producing materials for the home furnishings group in that they will have free hand in labeling their products. For example, most carpet manufacturers will merely add to their present labels a phrase such as:—"B.H.F. Alamo Group" or, in the case of a figured pattern:—"Ground Color: B.H.F. Alamo." The main purpose of this plan is to identify the merchandise so that it will be easy for the salesman or the consumer to put together the right colors to produce a balanced selection. At present there are over 20,000 colors that have been used in carpets without planned coordination with the colors used by the manufacturers of drapery, upholstery, and other fabrics for furnishings.

ACCEPTANCE BY INDUSTRY. The Home Furnishings Style Council and its resultant color card have been accepted by practically all of the carpet manufacturers and by leading textile houses such as Textron, Inc., Celanese Corp. of America, and Goodall Fabrics. Also, the National Retail Dry Goods Association, and the National Retail Furniture Association are actively supporting the newly developed color card.

boosting machine speeds —cutting costs

with magnesium warp beams!



Lightweight magnesium is doing a growing job in textile equipment today, and alert mill operators are making it pay dividends in speedier operations and reduced costs.

Take this magnesium warp beam. It's only one of the many magnesium parts that help cut inertia and contribute to perfect synchronization at higher and higher speeds. This beam has lightness, strength, rigidity, balance, and dimensional accuracy. On the job in tricot knitting mills, it means smoothness and precision in the knitting operation and reduced vibration in high speed warping. It means easier handling, too, and lower shipping costs.

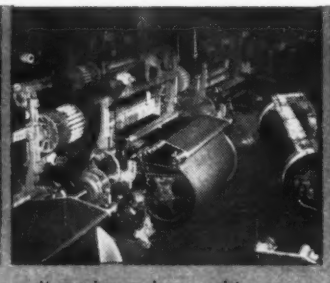
Rigidity superior to that of the former steel part is a feature of the cast magnesium head of this beam; the barrel is made from an extruded magnesium tube. Complete information on magnesium and technical aid in its application are available at the nearest Dow office.

Ready . . . to make products move!

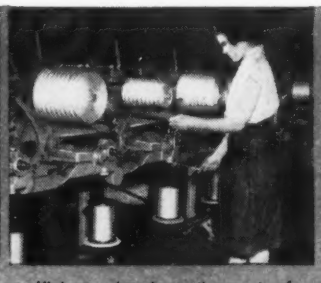
MAGNESIUM

LIGHTEST OF ALL STRUCTURAL METALS

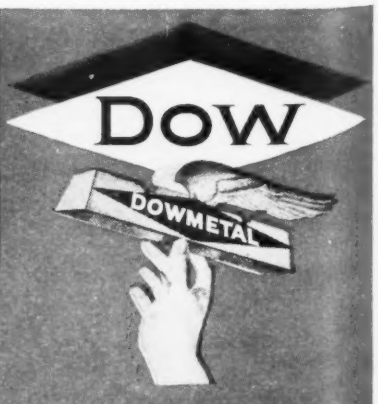
In looms, too, magnesium's lightness saves power, steps up speed, cuts vibration, and contributes to more uniform machine action.



Magnesium reduces maintenance resulting from failures commonly encountered in some loom parts made of nonmetallic materials.



High speed reciprocating parts of winding machinery are extensively made of magnesium in order to reduce wear and tear.



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DISTORTED LOOPS Avoided by Knitting Machine Adjustment

HIGHLIGHTS: *Faulty adjustment may produce distorted stitches—"Washboard" knitting may be avoided by adjustment—Special cam arrangement improves results in reciprocating knitting.*

By JULIAN W. HUGHES

UNEVEN TEXTURE of knitted fabric, to a greater or less extent, has long been the bane of circular-machine fixers. Excepting rare cases, distorted stitches are not so pronounced on single-feed machines during rotary knitting. Occasionally when knitting tubular fabric with two or more yarn feeds, courses will appear at frequent intervals with stitches of varying length. It is in the gores of hosiery and portions of split-foot work (where knitting is effected through cylinder oscillation) that distorted stitches are so conspicuous. When every stitch of each course is distorted to the point of lopsidedness, we have what fixers call "washboard" knitting.

Figs. 1 and 2 illustrate the arrangement of stitches knitted under varying circumstances. Courses appearing at regular intervals with short and long stitches are not so common. When they do appear, they are easily recognized and remedied, so no illustration is needed. In Fig. 1 is shown the interlacing of stitches as they usually appear when cast off the sinkers on a single-yarn-feed machine. Fig. 2 represents "washboard" knitting at its worst.

It will be noticed that the stitches are fairly regular in the first figure. The interlaced loops are not exactly true, being just a little shorter on the right-hand side which cannot be detected by the naked eye. Unless the knitting is too open and sleazy, or the sinker cams are worn so much that they fail to force the sinkers in far enough, the wales formed by these loops will appear straight; and the fabric will pass as commercial merchandise. Nevertheless, when more than one yarn feed is employed or when reciprocating, as when knitting gores or split work, forming a true loop with every stitch is not so simple; and "washboard" effects are likely.

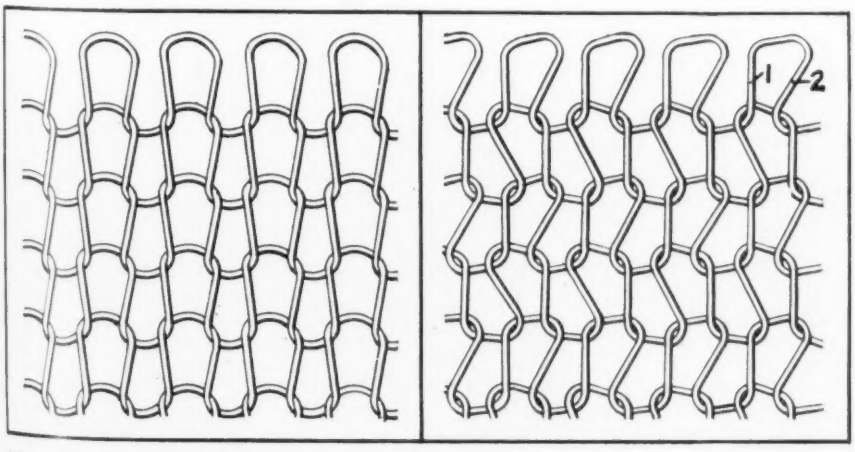
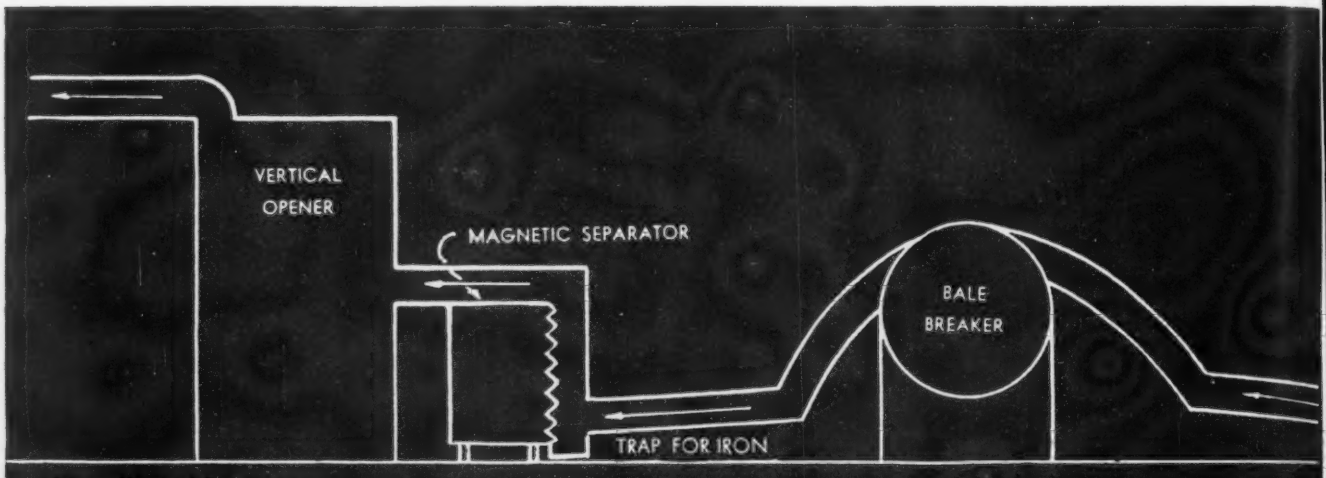


Fig. 1. *(left) Comparatively regular formation of loops during regular or rotary knitting is shown.* **Fig. 2.** *(right) Lopsidedness of fabric during reciprocating knitting under ordinary circumstances is shown. The zig-zag appearance is, of course, caused by inequality between the sides of the loops; (1) is the short side, (2) the long side of a typical loop.*

VARIATION OF COURSES. Another form of washboard knitting is the irregular texture due to variation in length of stitch from course to course. The stitches in such fabric may be normally formed but the variation of loop length presents a striped appearance. This is one cause of "tiger stripes", as dyers call them, when the courses reflect color rays differently. The primary cause of this course variation is uneven tension on the several feeds, or all the stitch cams not adjusted to form loops of the same length. The remedy is simple and well known to knitters who simply mark the yarn of each feed about a foot above the yarn carrier and note which yarns are being taken by the needles most rapidly. The stitch cams drawing the yarn most slowly are adjusted and the test is made again until the needles at all feeds take the same length of yarn. That makes courses constructed by all feeds the same in width and eliminates the wavey appearance of the knitted surface.

This variety of washboard knitting will frequently occur during reciprocal knitting, as in gores and split-foot work. It will be remembered that hosiery machines have two stitch cams even though there is only one yarn feed. These cams are known as the right-hand stitch cam, and the left-hand stitch cam. The left-hand stitch cam draws the needles down for a stitch constantly while the machine is running. The right-hand stitch cam draws a stitch only while heels and toes are being knitted or the split-foot is in process of formation. Naturally, the left-hand cam wears faster than the right-hand cam; and if it is not set immediately after it is ground

DINGS *Textile magnets are easy to install*



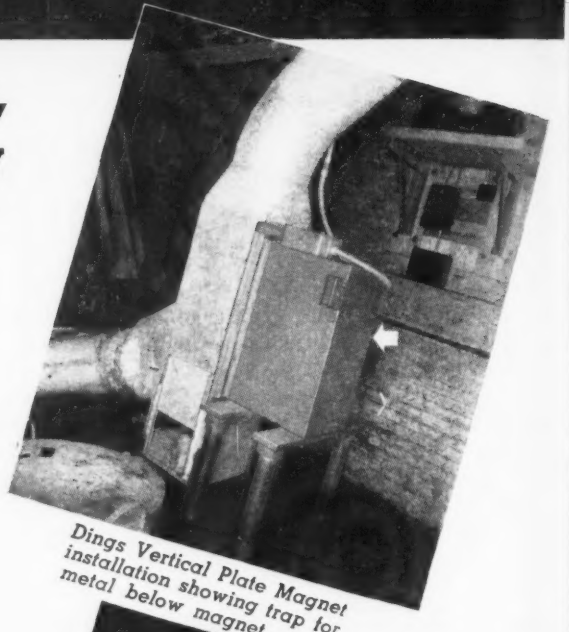
Dings Vertical Plate Magnet installed in the duct work between a bale breaker and vertical opener.

For protection from tramp iron, fires and damage to machinery

● Dings Textile Magnets are available for many simple installations like that shown in the diagram above. These units are highly recommended by insurance companies for removing dangerous tramp iron and their need is apparent from the following underwriter figures: *76% of opener-picker fires are caused by foreign substances* (mostly tramp iron). Many Dings Textile Magnet installations have the approval of the Associated Factory Mutual Fire Insurance Companies.

Dings Textile Magnets have a capacity of 1200 to 1800 pounds of cotton per hour, are 8 to 10 times more powerful and have an effective range of about 20 times that of non-electric magnets. Operating cost is about 1c per hour and there are no moving parts — nothing to wear out. Corrugated bronze face prevents sparking and helps arrest tramp iron. When power is interrupted iron falls into trap for easy removal.

Dings Textile Magnets are available from stock without priorities. Write for full details today and ask for the name of a user near you so that an actual installation may be studied.



Dings Vertical Plate Magnet installation showing trap for metal below magnet.

FEATURES:

- Approval of Many Individual Installations by Associated Factory Mutual Fire Insurance Companies
- Simple to install
- Low current consumption
- Nothing to wear out
- High capacity—high intensity
- Non-magnetic, corrugated face
- Easy tramp iron disposal
- Available from stock—no priorities

Dings MAGNETIC SEPARATION HIGH INTENSITY

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or polished, it will soon be drawing a shorter stitch than the other cam. If the stitch length of one cam differs much from that of its companion cam, the alternating courses will present a ridge-and-valley appearance. While the right-hand cam does not need the attention, as a rule, that the left-hand one does, whenever it is dressed off it should be checked to be sure it is drawing a stitch as long as its counterpart cam.

Through new developments and refinements, thanks to the ingenuity of circular-machine technicians, this washboard defect of knitting is gradually disappearing.

DISTORTED LOOPS. When the machine is knitting rotary as in the leg portion of the hosiery, the movement of the cylinder and needles is from left to right when one is standing in front of the machine. If the loops of each course are examined under a magnifying lens, it will be noticed that they are inclined to lean slightly to the left. That is to say, there is just a little more yarn on the right hand side of the loop. This means that the formation of each loop is just a little lopsided. It will also be noted that the velocity of the needles and cylinder affects the lopsidedness of these loops. The lower the velocity and the more the variation in velocity, the more the loops will be distorted.

When knitting takes place with an oscillating motion of the cylinder, the velocity of the needles is not only much lower than when knitting rotary, but also on most machines it is constantly varying from one end of the stroke to the other. At the end of each stroke, owing to the split-second dwell of the segment gear as the crank pin is passing dead center, the cylinder and needles start from zero, rapidly increase to maximum velocity, then drop to zero again as to the other end of the stroke is reached. This lower, varying velocity causes the needles to cast off the loops rather sluggishly compared with rotary knitting; hence the more pronounced lopsided loops in the courses during reciprocating knitting. When the cylinder is moving clockwise, the loops of that course lean distinctly to the right. When the cylinder reverses and moves counterclockwise, the loops of that course lean just as distinctly to the left. This gives a zig-zag appearance to the wales which is just as objectionable as the ridge-and-valley effect resulting from long-loop courses alternating with short-loop courses previously referred to.

THE FLOPPER CAM. To overcome this

(Continued on page 182)

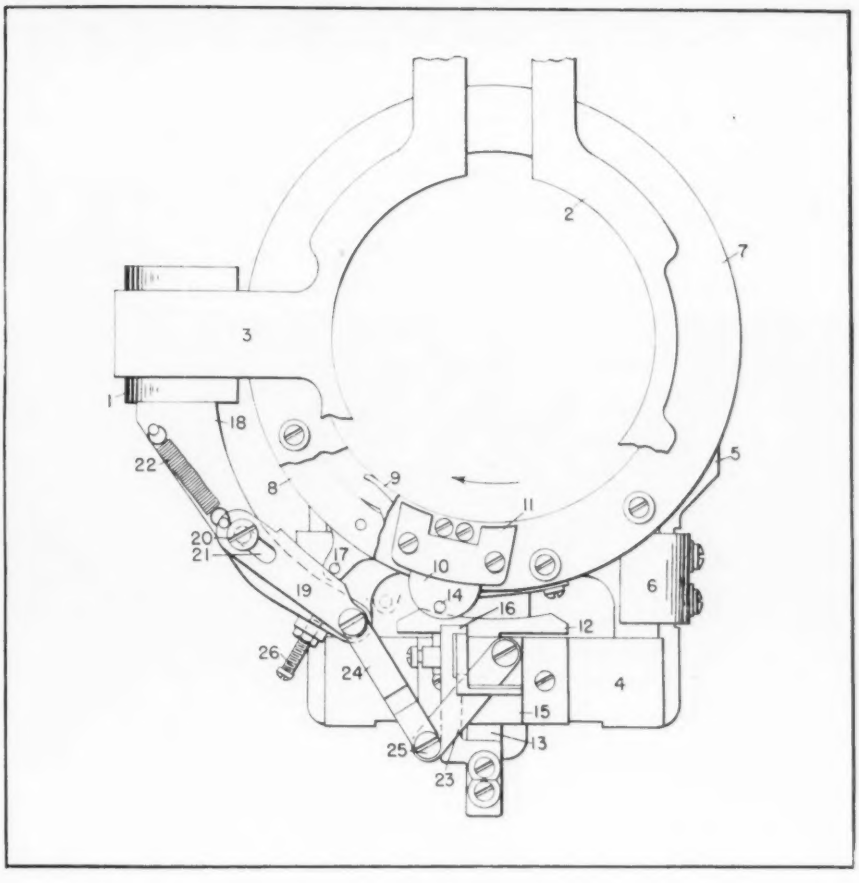


Fig. 3. Plan view of carrier ring, sinker cap, flopper cam, and connections. The numerals indicate (1) carrier-ring post, (2) carrier ring, (3) ring hinge, (4) auxiliary cam block, (5) cam plate, (6) clamp guide, (7) sinker cap, (8) left-hand side cam, (9) center sinker cam, (10) stem, (11) sinker-cap plate, (12) auxiliary sinker cam, (13) cam-contacting stem, (14) another contacting stem, (15) cam-contacting post, (16) lever-engaging end, (17) contacting pin on flopper cam, (18) supporting bracket, (19) auxiliary flopper cam, (20) cam pivot, (21) pivot slot, (22) cam spring, (23) lever link, (24) another lever link for auxiliary cam, (25) link pivot, and (26) flopper-cam adjusting screw.

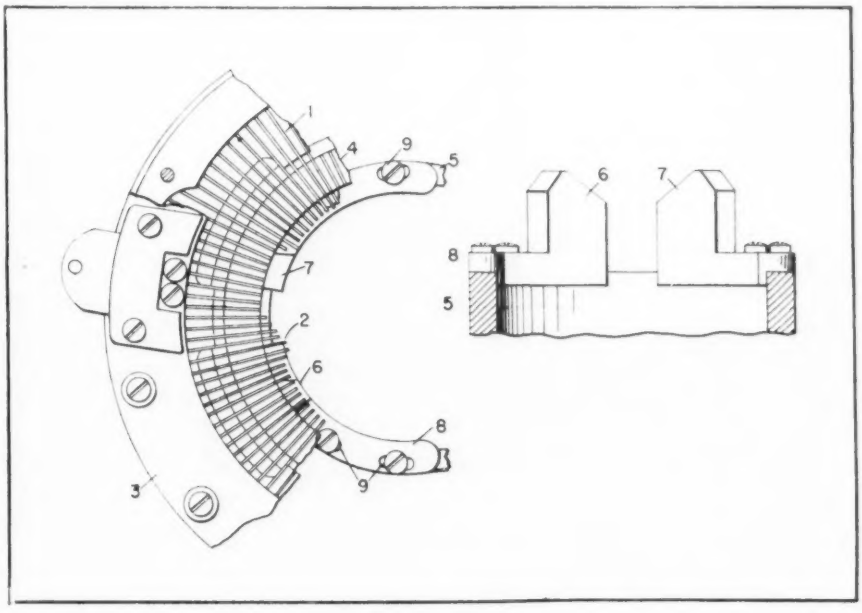
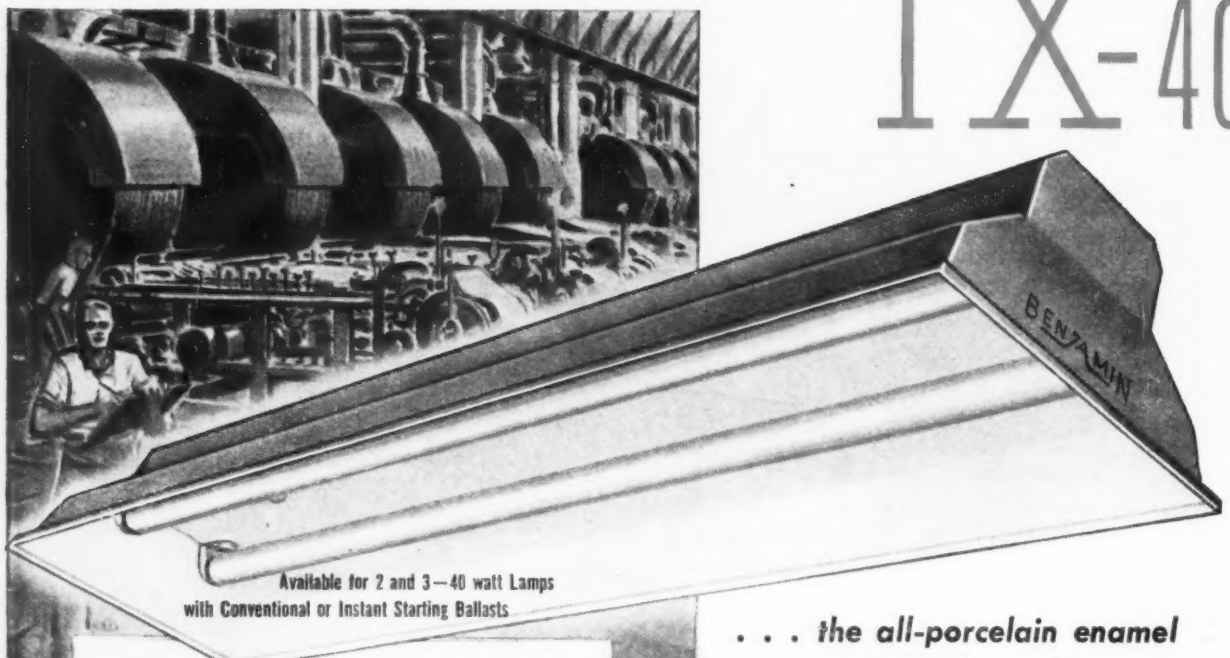


Fig. 4. Relation of sinkers and the inner sleeve cams. Cam details shown at right. The parts comprise (1) sinker head, (2) sinkers, (3) sinker cap, (4) stitch ring, (5) cylinder sleeve, (6) right-hand sleeve cam, (7) left-hand sleeve cam, (8) sleeve cam flange, and (9) flange slots for adjusting cams.

Humid, Damp and Dusty Locations call for this new one-piece Fluorescent Lighting Unit .... the new "TX-40"



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- √ Built-Like-A-Battleship Construction
- √ Easier Installation and Maintenance
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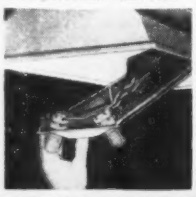
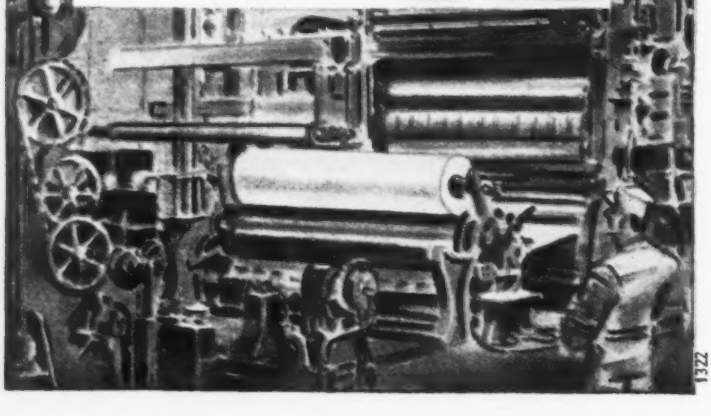
PLUS—

- √ SPECIAL RUST RESISTING HOUSING. Entire exterior of unit is single coated with gray porcelain enamel over a ground coat for extremely high resistance to rust. Inside section porcelain enameled with two white coats over a ground coat.
- √ ONE PIECE REFLECTOR HOUSING for durability and long life.
- √ REMOVABLE PORCELAIN ENAMEL STEEL PLATE on which control equipment is mounted forms the reflector top; removable by releasing two screws for easy wiring or inspection of ballasts.





1322

. . . the all-porcelain enamel rust-resisting unit.

Rust and other problems due to humidity and dust meet their master in the new Benjamin "Type TX-40." Now, even the most humid locations can be economically provided with fluorescent illumination through lighting units especially designed and constructed for such purposes.

"Type TX-40" Fluorescent Lighting units have wide applications in textile mills, paper mills, food plants, laundries and other process industries. In these locations the one piece all porcelain enamel construction of the "Type TX-40" unit provides durability and long life operation not possible with ordinary units. For complete data on these units and other Benjamin Fluorescent equipment . . . ***write Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Ill.***

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PORCELAIN ENAMEL
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NAPPING Needs a Measure of Performance

HIGHLIGHTS: *Some mills require six runs to achieve same results obtained elsewhere with three—Overseers are trained by experience—Military found napped cottons in garments were warmer than heavier wool cloths.*

By LOUIS C. TOLLESON
Union Bleachery, Greenville, S. C.

WHY DO COTTON FLANNEL PAJAMAS feel warm in winter when the smooth bed sheets feel like ice, even though both are stabilized at room temperature?

The answer is, of course, that the flannel has been napped. The soft fuzz which covers the surface of the flannel serves two purposes: first, it keeps the body of the cloth from making close contact with the skin; and second, it traps a lot of "dead" air in many small pockets to form an effective heat barrier or insulator. The thin layer of pocketed air between the skin and the well-covered center of the cloth is almost instantly heated to nearly body temperature, so the flannel feels warm because it does not conduct the warmth of the body away, as the smooth cotton sheets do.

USES FOR NAPPED FABRICS. The tremendous increase in heat-insulating qualities of napped fabrics was rediscovered and developed by alert military research men in a dramatic way. They devised tests which would reproduce almost any weather condition, including cold, heat, wind, and rain. They tested not only fabrics but actual garments on live subjects who moved around in the test chamber, where the testers tried to find out how much their movements were hampered by the clothing necessary to keep them warm and dry. These tests have shown, among other things, that a suit made of light wind-resistant poplin combined with a napped cotton flannel lining, when properly designed, is far warmer than the usual heavier wool garments, and allows much greater freedom of movement.

Besides adding to the warmth of fabrics, napping is used to produce many other desirable qualities. Softness to touch is one of these. Better absorption of light, with an apparent increase in depth of color is another. Many imitation leather fabrics are napped. Some of these are hard to distinguish from suede leathers, and can be used to produce many striking effects. Other napped fabrics closely approximate animal fur in appearance and warmth, while still others of this class are used to give effects of their own, which are distinct and different from any natural furs or skins. Still another group of napped fabrics is that made for mechanical purposes, such as filters for air and liquids, vacuum cleaner bags, felt absorption blankets, and many others.

For some strange reason, there is practically no printed information about napping available in this country. Most text-books mention it rather hurriedly, as if it were a rather elementary subject, or else of no great importance. Actually, forming a nap

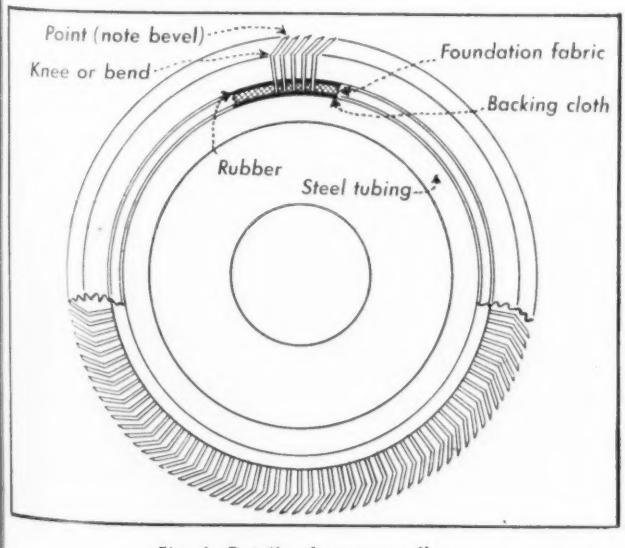
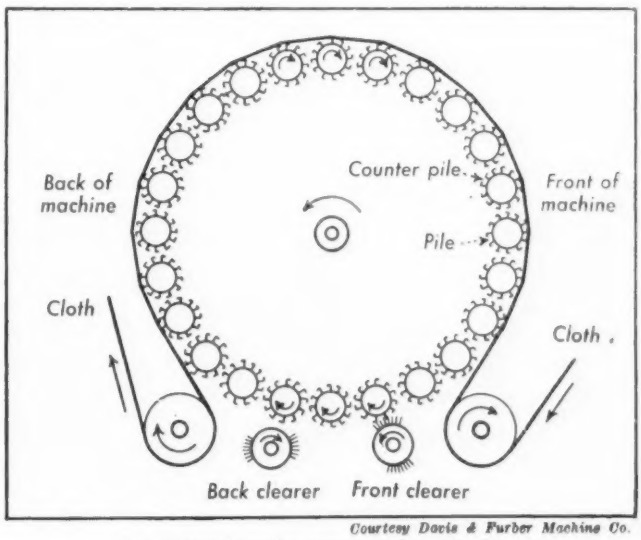


Fig. 1. Details of napper roller.



Courtesy Davis & Furber Machine Co.

Fig. 2. Double-action napper, schematic view.

When Coffee-Grinders were too busy for Cobwebs . . .

Back in those days, they liked their coffee "rich, strong and frequent". And the coffee-grinder kept up a hectic pace every other day or so...too busy to accumulate dust or cobwebs. At that same time, Aberfoyle was just as busy, working toward the leadership and international eminence it has subsequently achieved in its field.

Unlike the coffee-grinders, Aberfoyle's services have never become outdated or useless. Constant research, service and improvement has kept it always in the vanguard of the times. Busier than ever during this past war—working at top speed to help produce the multitude of yarns needed for the equipment of the armed forces, Aberfoyle can now turn to the manufacture of civilian goods. And the fine Aberfoyle Yarns you will be buying, will be *finer than before.*

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ABERFOYLE MANUFACTURING COMPANY
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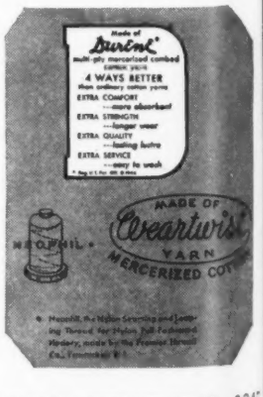


on cloth is not so simple. The importance of napping can best be judged by two things; its ability to increase the sales value and utility of the cloth, and second, the cost of this operation.

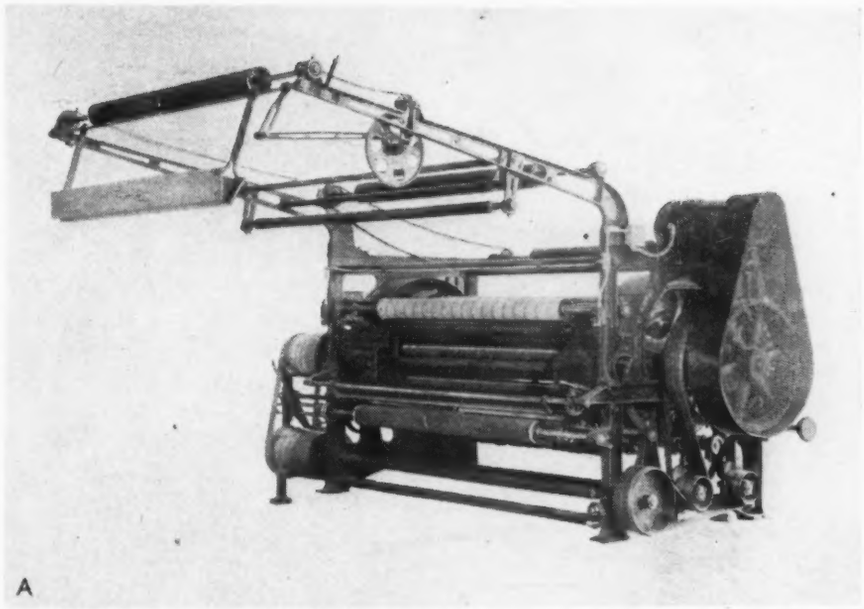
Since most napped fabrics could not be sold for the same purposes without the nap, there is no question as to its sales value. Napping machinery is not cheap, it operates at comparatively slow speeds and the labor cost is quite an item. Further, a check-up on several mills shows that one mill may be able to accomplish in two or three runs the same result that another mill takes five or six runs to produce. Some mills can arrange machines in tandem to cut labor cost in half, and so on. There is little uniformity. From a competitive standpoint, this is bound to be reflected in the profits of the various mills.

COMPLEX PROCESS. The process itself is almost entirely mechanical, but it is rather complex. Among the many variables are the cloth construction, weave and count, yarn sizes and twist, flatness of the fabric, cover, and internal lubrication, all of which concern the cloth itself. Besides these, there are the many variables of the napping operation, such as cloth speed, tension, humidity, temperature, roller speeds, sharpness and size of wire, kind of backing cloth for the wire, and the order of processing. When all of these are considered, the conclusion is that the experts who wrote text-books cautiously shied away from the napping process because of its complexity and their lack of information. So it has been left to the practical man to work out his methods by trial and error, or rule-of-thumb.

Many, if not most, of the napping overseers in this country have been trained almost entirely by experience, often in only one or two plants. Very few superintendents either of cloth mills which do their own napping or of finishing plants which finish napped fabrics know a great deal about napping. Who has heard of the napping overseer being made superintendent? This may account for some of the lack of close scrutiny given napping as compared to that given carding, spinning, weaving, bleaching, dyeing, printing, or any other major process. A glance at the size of the napper-room payroll and supply bill should give any executive an idea of its relative importance in his plant.

Surely this process deserves some attention from our writers and researchers. No doubt an exchange and pooling of information would lead to

(Continued on page 186)



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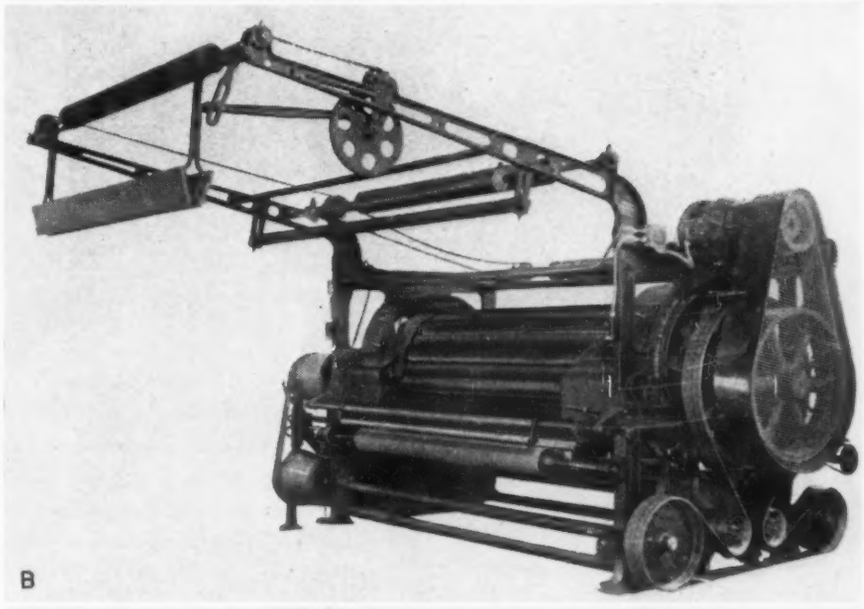

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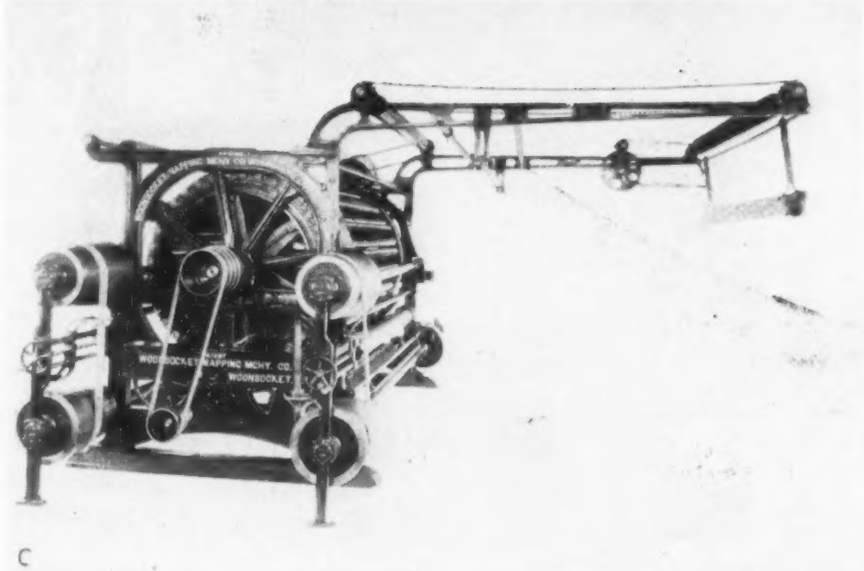

C

Courtesy Woonsocket Napping Machinery Co.

Napping machines shown are: A, 20-roll single action; B, 24-roll double action; and C, 36-roll double action.

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MILL TECHNOLOGY
Advanced by STA Meetings

***HIGHLIGHTS:**—Improved opener-room layouts at Erwin Cotton Mills and Rosemary Mfg. Co. given—Spinning break draft of 1.40 to 1.50 recommended for 1 1/16-in. cotton—Saving of 4% weave-room humidity and loom-production increase of 1.5% made by mill with use of automatic slasher-moisture control.*

A BROAD TREND toward mill modernization was revealed by the technical discussions at the sectional meetings of the Southern Textile Assn. during November at Gastonia, Durham, and Greensboro, N. C. The use of air for improving opening and cleaning equipment, electrical-current controls for slasher stretch, and automatic speed controls for moisture uniformity at the slasher received special emphasis.

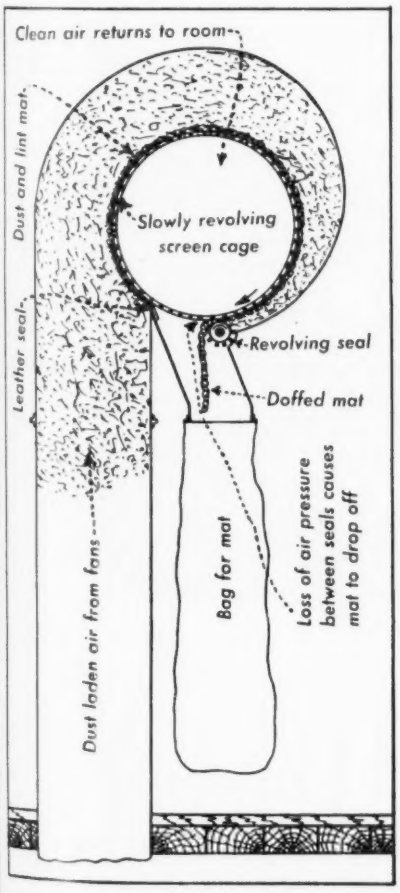
Clean air returns to room
Dust and lint mat
Slowly revolving screen cage
Leather seal
Revolving seal
Doffed mat
Loss of air pressure between seals causes mat to drop off
Bag for mat
Dust laden air from fans

Fig. 1. In the return-air condenser, used to eliminate the picker dust room, air is filtered through a screen and returned to the room, while dust and lint are dropped into a bag for removal.

The opener-room layout used at Erwin Mills No. 2 and No. 5, Durham, N. C., was given by C. W. Howell, superintendent, at the Durham meeting. Using strict low middling 1⅛-in. staple cotton, they put down a 21-bale mix and feed from three bales into each of seven blending feeders. The sequence of cleaning and the operating speeds are:

7 blending feeders
#12 lattice opener—840 (r.p.m.)
Vertical opener—773
#12 lattice opener—800
Condenser
Distributor
One-process picker
Production per feeder (lb. per hr.) 150+
Opener-line production 1100
Waste through pickers (%) 4

IMPROVEMENT SHOWN. This layout replaced a former one which included two vertical and one lattice openers, and tests have shown that for Erwin Mill's particular requirements the new system is better.

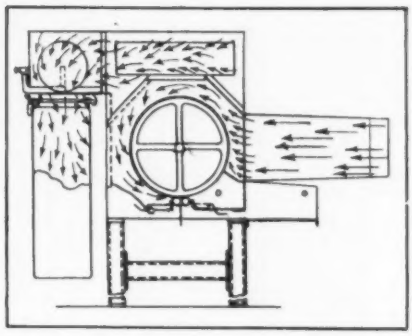

Fig. 2. The use of circulating-air filters on opening or picking equipment for dust elimination may be increased if lower grades of cotton are used.

The opener-room layout at Rocky Mount Mills, Rocky Mount, N. C., was given by W. J. Laughridge, superintendent. Each line was as follows:

4 blending feeders
2 spirawhirls
Whitin downstroke cleaner
Condenser
Production per feeder (lb. per hr.)— 250
Opener-line production—1000
Waste through pickers (%)— 5.49

Mr. Laughridge also described the

STA Discussions Timely—*Lower grades of cotton from this year's crop and the increased use of mechanical pickers and strippers give special emphasis to the STA discussions of opening equipment. Much of the late improvement of opening and picking equipment has resulted from the increased use of air as a method of transporting and cleaning cotton. Return-air condensers and circulating-air filters remove leaf and dust particles, eliminate the need for a dust room, and permit humidification of the picker room.*

Another factor behind opening and picking changes is the necessity for blending cotton and synthetic fibers.

Anti-stretch devices for slashers (TEXTILE WORLD, August, page 115) *to control stretch in rayon-warp yarns was regarded as important. From the statement of Thomas E. Nelson, Jr., at the Durham, N. C., sectional meeting, it appears that this device controls the stretch of blends down to 0.5% and of Aralac down to 1.5%.*

Gastonia Meeting—*Chairman H. G. Winget, superintendent, Victory and Winget Mills, Textiles, Inc., Gastonia, N. C., presided at the Gaston County Div., STA, in Gastonia, November 2. Marshall Dilling, Gastonia, secretary, arranged the program, which included an address by M. L. Rhodes, superintendent, N. C. Vocational Textile School, on training supervisors in the textile industry and an address by R. D. Hall, treasurer, Stowe Thread Co., Belmont, N. C., on the past and future of the combed-yarn industry.*

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use of a return-air condenser for eliminating the picker dust room; but since the opening equipment at Rocky Mount Mills is not yet provided with this dust-removal improvement, it is still necessary to maintain a dust room for these machines.

Mill experience with the Superior cleaner and the Lummus mixer was requested by V. E. McDowell, chairman of the meeting and assistant superintendent of Rosemary Mfg. Co., Roanoke Rapids, N. C. He gave the following layout as illustrative of the Lummus equipment:

Preparatory line
- 7 blending feeders
- 3 gyrator-type machines
- 2 horizontal cleaners
- Production (lb. per hr.)—2000

Opener line #1
- Lummus mixer
- Horizontal opener
- Production (lb. per hr.)—1000

Opener line #2
- #12 lattice opener
- Vertical opener
- Production (lb. per hr.)—1000

SLASHER DRIVE. Multi-motor drives for slashers, which provide separate power for the warp beam and the rest of the slasher, were also discussed by Mr. McDowell. Smoother operation of the slasher, particularly in starting and stopping, and decreased yarn tension were advantages pointed out.

A description of the Barber-Colman moisture control for slashers was given by M. R. Harden, superintendent, Erwin Cotton Mill No. 4. The mill has bought controls for all slashers, but at the moment the device is in operation on only one machine. This installation, Fig. 3, operates from the front delivery roll of the slasher, and its control feature is actuated by the amount of moisture present at that point. If more moisture is needed, the device shifts the belt on the cone drive to speed up the slasher. Mr. Harden stated that this control maintains a moisture content of 8% in the warps and that no sticky warps have been made since installing the equipment. Humidity savings in the weave room up to 4% have been noted as a result of weave-room tests upon the warps produced. Loom production increased 1.5%, according to H. E. Sullivan, general overseer of weaving; and Mr. Harden stated that expected increases of speed at the slashers should enable a mill using the moisture controls to reduce the number of slashers operated.

LOOM SPREADERS. Loom braces, or spreaders, with which new looms are now being equipped, were described by W. H. Miley, Jr., superintendent, Erwin Mill No. 2. The Draper X-model looms at Erwin have 5-in. girders instead of the normal 3-in., and the sturdier construction was said to permit higher loom speeds.

Information on applying the braces to older looms, such as the E-model, was given by Grady King, overseer of weaving, Rosemary Mfg. Co., and E. E. Riddle, superintendent, Wennonah Cotton Mills, Lexington, N. C.

The important contributions which supervisors make toward better human relations in industry were stressed by Herman Cone, president, Proximity Mfg. Co., Greensboro, N. C., in the welcoming address at the Greensboro meeting.

Break drafts between 1.40 and 1.50 and a 1¾-in. setting of the back and middle rolls of long-draft spinning frames were shown by recent tests to be best for 1⅛-in. cotton, according to Carl Brandt, Director of Research, Whitin Machine Works, Whitinsville, Mass. With closer settings of the rolls, the amount of break draft is not too important, except that too much draft will break the end. With wider settings, the break draft must be more accurate, since extremely high or extremely low drafts result in inferior yarns.

The relationship between the size of rayon denier and the strength of spun-rayon yarns was given by Mr. Brandt as follows (the strength of 1.5-den. yarn was taken as 100%): 0.75-den., 140%; 1.00-den., 130%; 3.00-den., 86%; and 4.50-den., 75%.

The Greensboro meeting was well attended by mill operating executives of the northern North Carolina and Virginia division of the Southern Textile Assn. At left, C. Mallard Bowden, Southern Editor, TEXTILE WORLD is conversing with George Dunlap, U. S. Dept. of Agriculture, Clemson, S. C.

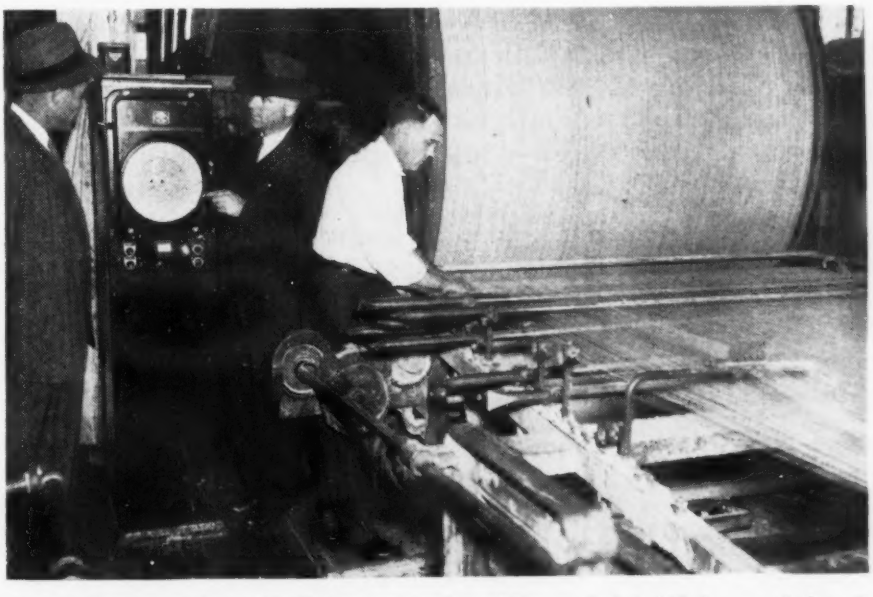

Fig. 3. Details of the Barber-Colman automatic moisture control installed on a slasher at Erwin Cotton Mills are being pointed out by M. R. Harden, superintendent, Mill No. 4, to H. D. Sullivan, overseer of weaving, as operator R. D. Ray inspects the warp yarns.

NO industrial asset is more jealously guarded than a good trade-mark.

It is the symbol of quality upon which a manufacturer stakes his reputation . . . and his future.

That's why you find so many famous trade-marks "at home" in Southern New England, because here are the skills and facilities which contribute so much to a product's high — and uniform — standards.

Hats, tooth powder, coaster brakes . . . toasters, sewing machines, skid chains . . . tires, rifles, electric shavers . . . there is no end to the variety of "name" goods manufactured in Western Connecticut alone . . . and they are here for these very good reasons:

Southern New England is industrially-minded in all that it does . . . and has been for generations.

Southern New England is the heart of the world's richest market. Within a radius of 500 miles of its center, live 58,000,000 consumers who will take all Southern New England can produce . . . and more.

Southern New England is at tidewater. And manufacturers locating within this area have ready access to the great sea lanes of expanding international trade.

Southern New England is a good place to live and raise a family.

Add them all together and you can come to but one conclusion: Southern New England would be a great place for *your* business, too.

Yours for the asking — a full-color booklet: *"Southern New England for Tomorrow's Industry"*. Get your copy by writing to P. E. Benjamin, Manager of Industrial Development, The New Haven Railroad, 80 Federal St., Boston 10, Mass.

This is one of a series of advertisements presenting the industrial advantages of Southern New England.

THE NEW HAVEN R.R.

Serving **SOUTHERN NEW ENGLAND** *with a network of rail and highway transportation that puts every manufacturer* "ON THE MAIN LINE".

FIVE M's { Men, Management, Materials, Machines and MISTAKES Influence Hosiery Production

HIGHLIGHTS: *Output on preboarding machine increased from 70 to 250 doz. per 8 hr.—Coupling intake and exhaust valves helped speed up operation—Handling 66-gage nylon hosiery aided by bundling system—Mistakes can be prevented by using proper methods.*

By J. A. CRUMLEY, *Hosiery Processing Co.*

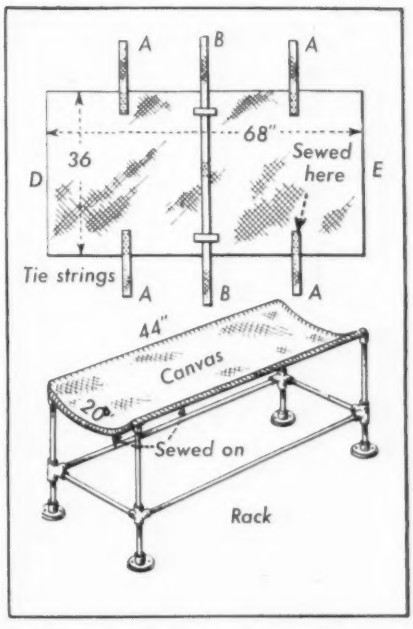

Fig. 1. Rack and cover shown can be made up for handling 5 to 10 doz. nylon hose at a time.

WHEN CONSIDERING the rather alliterative subject of men, management, materials, and machines, do not overlook a fifth *m* which sticks out like the proverbial sore thumb, and that is the *m* that stands for mistakes. The five all combine to get a job done.

Starting in the textile game during the early days when we had pine-pole shafting and were paid off every two weeks in turnip salad, I have, of course, noticed a lot of changes.

We are getting ready for the return of nylon. What a comparison between the old, heavy socks of carded yarn of years ago and the sheer nylon hosiery we are making today. In those days we did not worry about pulls. The hosiery was almost snag-proof.

The first company I worked for owned several steam traction engines, the kind you have seen pulling threshing outfits in the country. At an abandoned store building in some small town, the traction engine would be pulled up to a back corner. Holes would be dug in the earth to anchor the wheels, and a belt run through the wall to inside shafting. With knitting machines on both sides of this shaft, socks were soon coming off the production line—in quantities!

One small branch mill I remember had only 40 machines, yet their daily production was 400 doz. So cramped were they for space that the knitters pitched the tied-up dozens backward over their shoulders into the aisle. By five o'clock in the afternoon, bundles were nearly a foot deep on the floor. They were then loaded into cases for the next day's shipment. Of course, we worked the twelve-hour shift then. From six to six. Those socks got walked on plenty which did them no good.

The men of those days—manpower if you wish, labor if you choose, but operators of machines in every respect—could be no better than the material and machines that management provided. We did not arrive at fine-gage hosiery overnight. The machine improvements had to come gradually. So have the five *m*'s progressed along together.

Our men will be no better than the standard we set for them in quality. Management must know what it wants. Only the best of material and machines can produce to a high standard. As a part of management, I seek to help eliminate mistakes. We have recently ordered time and temperature controls for all our dye machines. The mistakes of boiling over or of dropping temperature which cause certain colors to drop off or act erratic will be eliminated. We are enabling our men to be better operators. Nylon is best dyed at temperatures under a boil. We want ours done the right way, so management buys the right machine to do the job properly. Then more time can be given by our men to carry out other things.

Every pulled thread we discover in a nylon stocking is a mistake. Prevention is that ounce of carefulness

(*Continued on page 202*)

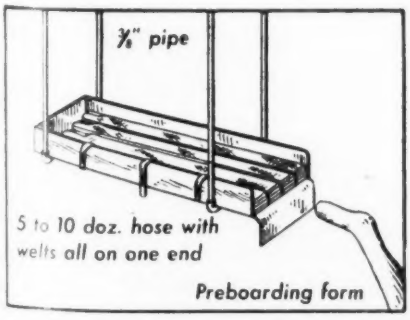

Fig. 2. By placing bundles of hose at the same elevation as the end of the forms, with welts close to the forms, much time is saved.

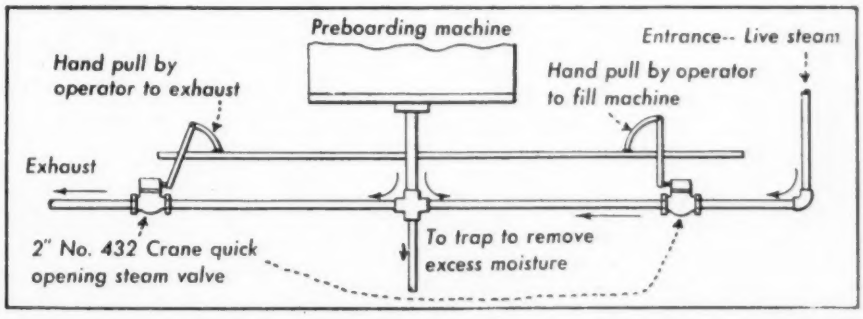
Preboarding machine
Entrance-- Live steam
Hand pull by operator to exhaust
Hand pull by operator to fill machine
Exhaust
2" No. 432 Crane quick opening steam valve
To trap to remove excess moisture

Fig. 3. Coupling two quick-opening steam valves as shown permits one to be turned on as the other is turned off and speeds up the preboarding operation by reducting number of manual operations and cutting the time lag.

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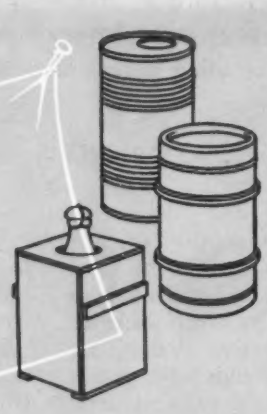

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Release of SURPLUS Textiles Bogs Down at Critical Time

HIGHLIGHTS: *Current scarcities make present obviously best time to move military surplus, but scant progress is being made—Office of Surplus Property has been booted about—Complications and differences of opinion exist—Disposal methods have been confusing.*

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

BUSINESS OBSERVERS in Washington and the more candid of interested government officials are not at all satisfied with the progress made to date in the release of some important categories of surplus goods to consumers through regular trade outlets. The delay, which is causing concern, comes at a time when these items are most needed—that is, in the period between the beginning of reconversion and the full resumption of civilian production.

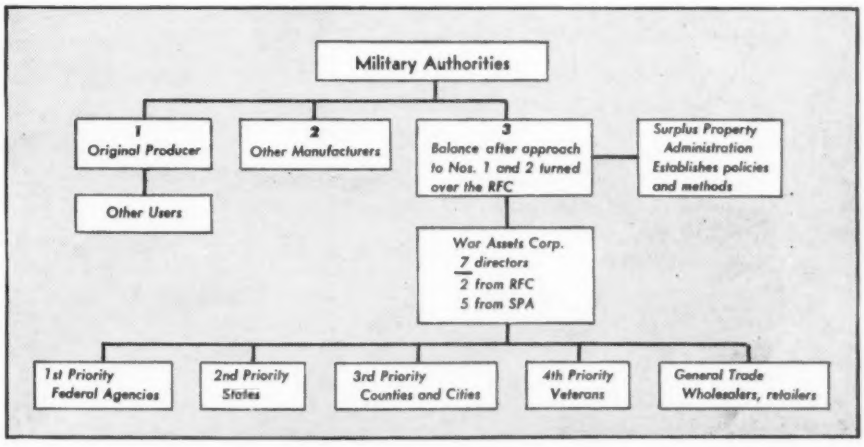
One of the outstanding examples of the areas where semi-stagnation has taken place is textiles. The situation, it is pointed out, is aggravated by the fact that textiles have been and still are in critical supply, thus creating a made-to-order period for unloading surpluses to the civilian market without interfering with future manufacturing programs, or wholesale or retail channeling.

Immediately after V-J Day enormous textile surpluses were indicated in the cutbacks and cancellations of the Armed Services. In the months that have intervened, only a comparatively slender trickle of surplus textiles have gone into the channels of trade. Even more important, there is much uncertainty as to the real size of textile surpluses, and a growing skepticism as to when and to what extent they will be a real factor in the calculations of the textile industry in planning its production schedules.

SHIFTING OFFICE. The situation is ascribed to a variety of factors. One factor is the time which has been lost in transforming the top policy agency from a three-man board to a single administrator. Another factor is that the Office of Surplus Property, which actually disposes of the surplus goods, has been given a run-around. It was first located in the Treasury Department, then it was moved to the Commerce Department, and now is a part of the Reconstruction Finance Corp., although at the time of writing one month after the Executive Order placed it under RFC, it is still operating from the Commerce Department. This perpetual motion in the disposal agency and the uncertainty in top policy has been aggravated by the lack of clear-cut inventory data from the Armed Services as to what textiles they had for surplus disposal either in the warehouses or in the pipe lines. The uncertainty also extends to the "as is" condition of items declared surplus, which affects their immediate availability for merchandising. For example, the Army released some pajamas, but it developed that there were 400,000 tops and only 200,000 pants. The tops were blue and the pants were green; the tops were declared in three different locations and the pants in several other locations, thus creating a shipping and packaging problem as well. Hence, it has been necessary for the surplus disposal agency virtually to check all items before offering them to prospective buyers. The time and the personnel that the agency would need to do the checking job alone can be appreciated from the fact that military surpluses, not to mention surpluses from other government agencies, are being declared at over 4,100 points, and under the law must be accepted at those points. These complications mean that even if the Services themselves do a better job of inventory-taking than has been done to date, surpluses of textiles in large volume will not reach the market even within a broad approximation of the time originally taken for granted.

ODD WIDTHS. Another difficulty arises from the fact that some of the textiles are non-standard in composition. For instance, 30,000 yd. of duck was released and sold recently. A large part of it had been woven on carpet looms and therefore was not of standard widths. Furthermore, some of it had been treated to make it waterproof and mildewproof. It can be seen that cost figures on such goods are of little value in setting up prices that will be uniform.

Added to this has been the not infrequent tendency on the part of the Services to declare an item surplus today only to recall it tomorrow. A case in point was the proposed sale of 3,150,000 yd. of parachute silk which OSP cancelled when the War Department took back the fabric for military use. This silk had been declared sur-



Flow chart of sales procedure after military authorities declare goods to be surplus, according to accompanying article.

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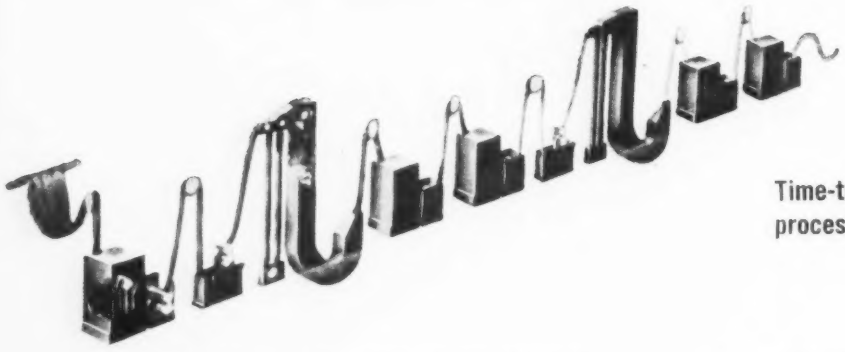

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NOW is the time to consider savings, how *you* can make effective use of a Du Pont Continuous Peroxide Bleaching System. Write today for complete, detailed information about these modern systems for speedy, low-cost bleaching. **E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.**

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

plus by the Army on Aug. 18 and announcement that the order was cancelled came on Nov. 9.

METHOD OF DISPOSAL. There has been considerable confusion regarding the government's method of surplus disposal of military textiles. At this writing, it moves along these lines: Military authorities in terminating a contract with a producer offer the producer the first opportunity to bid on the inventory in whole or in part. He can bid on it for his own use, or he can bid on it at a higher price "for resale", which, if accepted by military authorities means that he can offer the inventory direct to buyers. Military authorities can have their disposal representatives directly contact other manufacturers with a request for bids. Whatever remains of the inventory, after this direct canvas of market possibilities is made, is turned over to RFC for surplus disposal.

The Reconstruction Finance Corp., in turn, operates through a subsidiary, the War Assets Corp. This corporation will handle approximately 90% of surplus government property located in continental United States, including all consumer goods. It will be made up of a board of directors of seven members, five from RFC and two from SPA, and will be staffed with both RFC and Department of Commerce personnel. An advantage of this War Assets Corp. set-up appears to be that it can function with a great degree of freedom, since it is not bound by the statutory limitations of the regular government departments.

Priorities for purchase of surpluses are given first to Federal agencies; second, to the states; third, to counties and cities; and fourth, to veterans. National sales programs are planned in Washington, but the actual sales are handled at the various regional offices. Manufacturers who might be interested in the various offerings are notified and it is important that those who want to be put on the mailing list register at the nearest regional office of RFC. Formerly, surpluses were listed in the *Surplus Reporter*; but this publication has been suspended, and the question of whether it will be resumed in some form is now under consideration.

PREFERENCE PROBLEMS. Sharp differences of opinion have developed from time to time over the preferences that should be accorded to veterans (under Reg. 7). That no satisfactory arrangement has yet been adopted is indicated in the recent announcement by W. Stuart Symington, Surplus Property Administrator, of a plan now under consideration for setting up a system of veteran preferences, which would allow them to buy from wholesalers with coupons to be issued by another agency, presumably the Veterans' Administration. It was explained that veterans would have to pay the dealer's price, whereas now they can buy direct from an RFC disposal agency at wholesale price, but that they would have the convenience that this service would offer through direct access to a large number of wholesalers scattered throughout the

(*Continued on page 194*)

Penetration Means Less DEPTH OF SHADE

HIGHLIGHTS: *Mercerized cottons dyed with same bath as unmercerized look much darker although they take up relatively little more dyestuffs—Color penetrates fiber better before mercerization—Rayon is different.*

DIFFERENCES IN DEPTH of shade obtained in dyeing are due not to one factor, but to several factors, it was disclosed by R. W. Jacoby, of Ciba Co., Inc., at a meeting of the Rhode Island Section, American Association of Textile Chemists & Colorists, held in Providence.

Mercerized and unmercerized cotton samples were dyed in the laboratory in the same beaker with Ciba Blue 2BD so that if one had greater affinity for dyestuff it would take color from the other. Chemical analysis of the amount of dyestuff actually present on the unmercerized and mercerized samples was of the ratio of 100 to 112.

Spectrophotometric analysis of these samples revealed that the comparative depth of shade of the unmercerized and mercerized samples was of the ratio of 100 to 167.5, a considerably greater depth of shade for the mercerized sample than was indicated by the dyestuff it received.

In a plant trial, an unmercerized piece of goods and a mercerized piece were dyed, and later the unmercerized piece which had been dyed was divided into two equal lengths and one of the two pieces thus obtained was mercerized.

The piece which had been mercerized after being dyed was examined spectrophotometrically and showed a depth-of-shade ratio to the unmercerized sample of 129 to 100. Chemical analysis showed the amount of color present on the pieces to be substantially the same, since they were two halves of the same dyed piece.

Spectrophotometric examination of the undyed cloth showed that the increase in depth of shade of the cloth mercerized after dyeing was due to more light transmittance and less reflectance.

On the cotton fabric dyed after mercerization, it was found that the amount of dyestuff present in comparison with the unmercerized cotton was of the ratio of 109 to 100. But the analysis of depth of shade showed a ratio of 227 to 100. Since the spectrophotometric analysis of the fabric dyed before mercerization showed an increased depth of shade of the ratio of 129 to 100 compared with the unmercerized sample, as noted above, it was felt that while part of the effect giving the deeper shade on the fabric dyed after mercerization (227 to 100) was due to optical effect, part was due to some other cause.

Photomicrographs of cross-sections of fiber showed that the sample which was dyed before mercerization was thoroughly penetrated by the dyestuff, and that in the case of the sample dyed after mercerization the color was all on the outside of the fiber.

From the above investigation, it was concluded that the fact the mercerized goods are darker in shade when dyed under the same conditions is due to a change in optical properties and reduced penetration by the dyestuff.

A similar experiment run on rayon showed that rayon takes on considerably more color than unmercerized cotton, but not enough to account for the increase in depth of shade. Chemical analysis, microscopic examination, and spectrophotometric study showed that the increase in depth of shade of rayon over unmercerized cotton was due to a combination of three factors: (1) additional color absorbed, (2) differences in reflectance between cotton and rayon, and (3) difference in penetration.

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TEXTILE Equipment NEWS

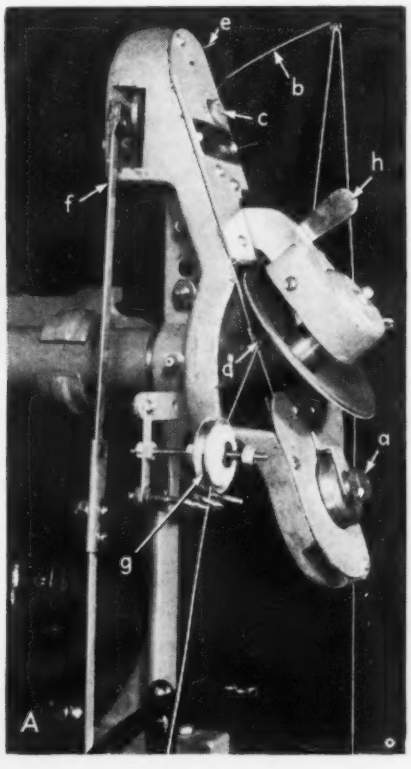
Tension and Density Control Being Produced by Kidde

Controlled, uniform tension from practically zero to extremely heavy plus accurate density regulation are possible with two devices being produced by Walter Kidde & Co., Inc., and sold by Matthews Equipment Co., Providence, R. I. for use on winding machines. Tension and density control are achieved by two separate attachments mounted on precision cone and tube winding machines, of which one experimental unit is shown.

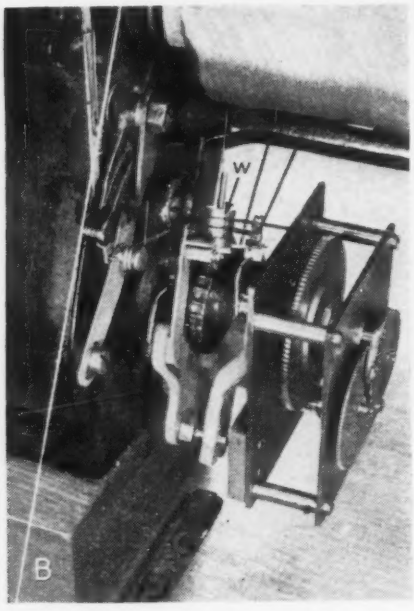
The tension device (close-up A) is actually a feed mechanism, power driven by a pulley on the shaft that drives the spindle. Any over-end supply can be used and supply spools and swifts can be unrolled at reduced speeds. The tension is especially suited for such critical winding as yarn for dye packages, rubber yarns, even nylon.

The device actually feeds the yarn, and thus the tension of the yarn wound on the package is independent of the tension produced by the supply package. Variation in the rate of feed is achieved by using two conical drive wheels—as yarn is guided through the wheels near their center, the rate of

The tension and density control devices are shown here mounted on a single unit of a precision winding machine. (Kidde)



A close-up of the tension device is shown in illustration A. Tension is regulated by a spring mounted under the knurled knob a which works against the control arm b through the pivot c. As tension tends to decrease, the yarn guide d is moved toward the center of the conical feed wheels and, consequently, the amount of yarn fed is reduced and the tension increases to the amount set. The control arm is sufficiently flexible to overcome "hunting" and to compensate for quick changes in tension such as caused by the traverse. At e can be seen a wire which acts through the arm f to operate the regular stop motion should the end break or run out. Disk tension g merely acts to control the feeding of the yarn to the drive. The lever h lifts the top feed wheel for threading.



Removal of the cover of the density control mechanism as shown in unit B reveals a "clockworks" which merely is a gearing to allow the back to fall away slowly. The pressure bar (see main photo, above and to left of operator's thumb) can turn slightly from the pressure of the revolving package. The amount of pressure needed to turn the bar is governed by the weights w. When the bar does turn, it releases a ratchet which permits the clockworks to turn and the bar to fall away very slightly. If the pressure bar is moved away from the package for any reason, it can be replaced by pushing as the operator is doing, although the final adjustment to the package is made by a rubber-covered wheel seen protruding from the right-hand side of the cover.

feed is slow; as it is fed nearer the outer edges, the rate increases. A simple leverage arrangement, working against a spring which controls the amount of tension, keeps the tension constant.

The density control mechanism operates entirely independently of the tension device. (Close-up of density device with cover off is shown in *B.*) It is simply an arrangement for moving the pressure bar away from the package through an escapement mechanism. As friction increases on the tension bar, it turns and thus operates a trip mechanism which permits the traverse back to fall away from the package very slightly. Weights regulate the amount of friction needed to turn the tension bar, and thus, the density of the package is controlled.

Both the tension and density devices are needed, Kidde states, for building the best package. Production of the units has already started; and trial installation for winding acetate, worsted, and nylon dye packages have proved successful, as well as winding elastic threads.

Drum-Opening Tool Works Like Can Cutter

A drum-opening tool, designed for fast cutting and for safety, and operating somewhat on the principle of a kitchen can opener, is being made by Merrill Bros., 56-02 Arnold Ave., Maspeth, New York, N. Y.

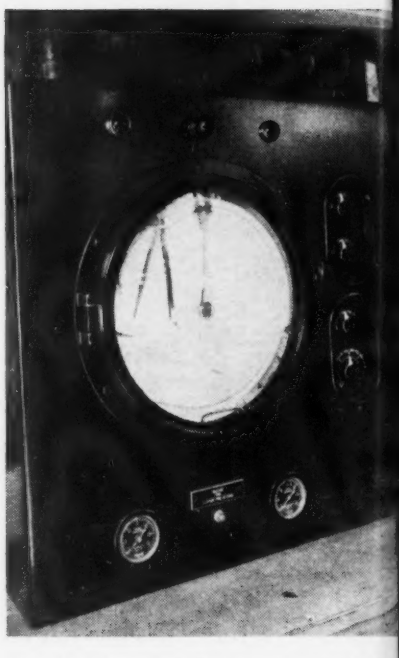
The opener is made of steel, is 23½ in. long, and weighs 5½ lb. The long handle gives enough leverage so that a drum can be opened with the expenditure of little energy.

The drum-opening tool permits cutting away the top of a steel drum with ease. (Merrill)

Temperature Controller Operated by Four Knobs

An improved temperature-control unit for governing elapsed-time temperature and having a deferred-action and rate-of-rise control is being manufactured by the Foxboro Co., Foxboro, Mass. The new unit embodies all the features of the company's standard temperature controllers and is adapted for kettle dyeing, vulcanizing, canning, and other batch processes requiring repeat or moderately variable cycles.

Simple, panel-front adjustments add to the operating flexibility of the unit. The controller can be set for any rate of rise between 1° and 8° F. per min., and temperature can be held at a predetermined point for a time period adjusted by a holding-period knob. The process is stopped by the control at the end of the cycle. Panel pilot lights in different colors indicate the rising temperature phase, holding period, and end of the cycle. A signal lamp shows the position of the power-supply switch at all times. For certain processes, such as skein dyeing, the controller is equipped with automatic switches to operate forward-and-reverse-acting liquid agitators during the holding period.



The Cyclelog provides accurate control in batch processing for the temperature rise, holding period, and process ending. (Foxboro)

Adjustments of the instrument are made by setting the four knobs according to the job specifications. A record of each cycle or succession of cycles is made on a chart; and thus, with knob settings, data is gathered which make possible the duplication of the process later. The holding-period adjustment is accurate within 2 min. in a 3-hr. period.

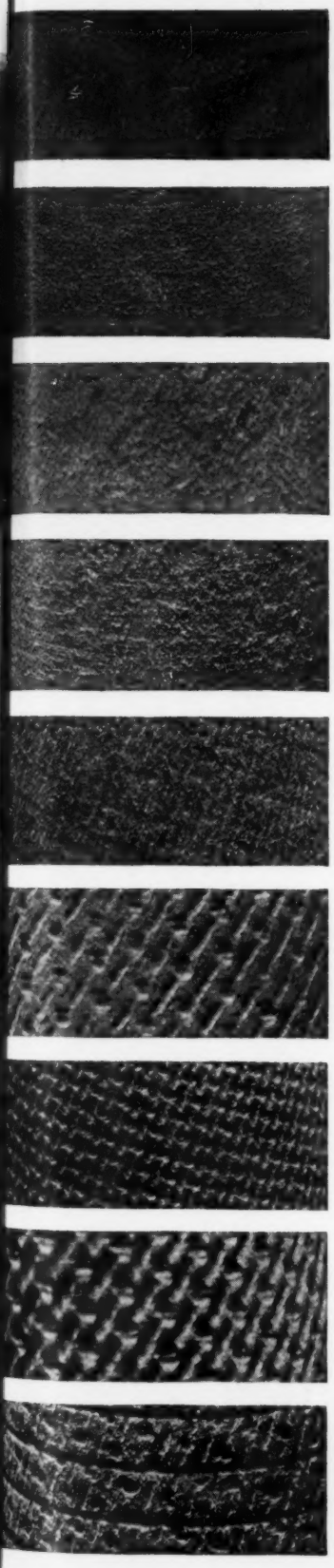
The cabinet is of cold-rolled steel, 24x21x6 in., is totally inclosed, and is said to be dust and moisture proof.

Steam-Type Humidifiers Use a Venturi Nozzle

Two new steam-type humidifiers, utilizing a venturi nozzle to discharge steam, are now in production at Armstrong Machine Works, Three Rivers, Mich. These humidifiers are particularly suitable for textile steam-conditioning rooms and for general humidification of textile plants in regions of low outside temperatures because of their minimum effect upon room temperature.

One of the models has a solenoid valve to control automatically the discharge of steam, while the other has a hand-operated valve to meet the need for manually controlled humidification.

The venturi nozzle replaces an electric fan and motor used on the older Armstrong models. By virtue of a fast



A Job for EXPERTS

The panel shows nine different degrees roughness or smoothness in the surface of a cone.

Each cone surface has been developed to solve a problem arising from special characteristics of some particular type of yarn. Frequently a newly developed surface has been found to suit a wide range—some surfaces are limited in application—cone shapes have a bearing on surface requirements.

Machine adjustments and even local conditions in a given mill also have a bearing on getting the most efficiency in winding, packaging and delivery of yarns. Truly, the selection of the right cone for the right purpose, is a job for experts.

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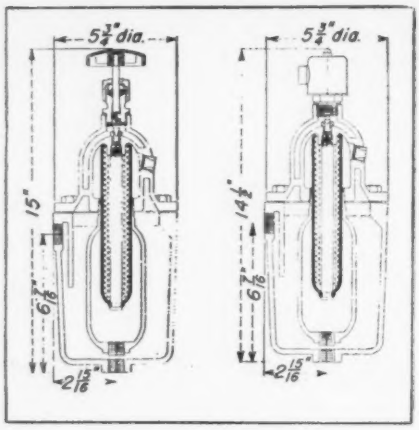
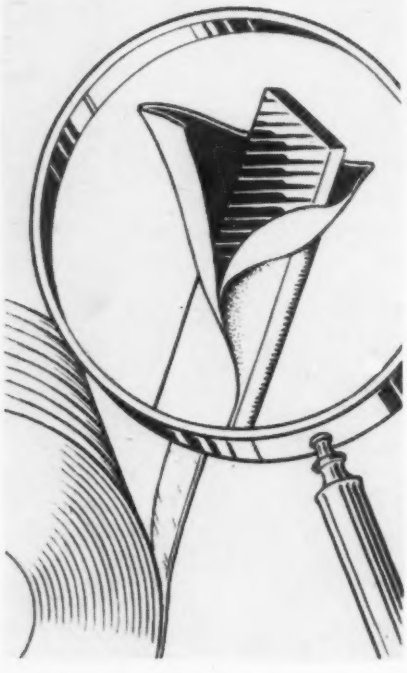


The steam-type humidifiers may be controlled automatically or manually. (Armstrong)

steam discharge through the nozzles, thorough mixing with the air is attained.

One advantage of this new unit is simplified maintenance, since there is no motor to oil. Elimination of the motor also reduces the electrical load on the humidistat which controls relative humidity by making and breaking an electrical circuit.

Steel Box-Strapping Is Covered With Paper



The strapping has a steel-band core covered with waxed paper. (Gerard)

A new box strapping consisting of a flexible steel-band core covered with waterproof kraft paper, has been announced by A. J. Gerrard & Co., Chicago, Ill. Bearing the name Fiber-Steel, the strapping is smooth and finished with wax to improve handling. It is said that it can be applied directly to enameled or painted surfaces and that trademarks and company names can be printed directly on it.

Photographic Flash Lasts 2-Millionth Second

A light source for photographic exposures of the order of 2-millionths of a sec., to be used in industry for recording mechanical phenomena occurring in a fraction of a second, is being manufactured by General Radio Co., Cambridge 39, Mass. Known as the "Microflash," the equipment is an addition to the company's stroboscopic products.

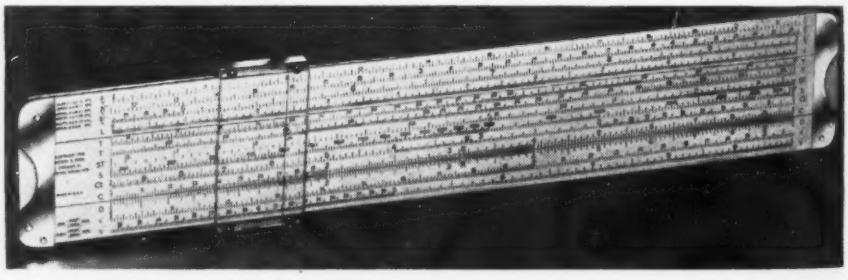
The Microflash consists of a power supply to charge a condenser to high voltage and means for discharging the condenser through a gas-filled lamp. Ordinary film and camera equipment can be used with it.

The Microflash equipment ready to be plugged in and used. (General Radio)

New Slide Rule Places Decimal Point

A slide rule which places the decimal point in mathematical calculations has been announced by Pickett & Eckel, 53 W. Jackson Blvd., Chicago 4, Ill. The scales have been arranged to simplify computations, and it is said that persons with limited mathematical knowledge can perform intricate calculations.

An instruction manual is provided with each rule so that all phases of the slide-rule operation can be quickly learned.



The decimal-placing slide rule is 1⅛ in. long and 2 in. wide. (Pickett & Eckel)

USEFUL ACCESSORIES FOR THE TEXTILE MILL

Photocopying Equipment

A machine for photocopying written, printed, typed, drawn, or photographed matter is being marketed by the American Photocopy Equipment Co., Chicago, Ill. Known as the A-Pe-Co, the machine is said to make easy-to-read, permanent photocopies which will withstand much handling.

Suction Pump

A new hand-operated suction pump, built of an inert plastic, has been announced by The Alden Speare's Sons Co., Cambridge, Mass.

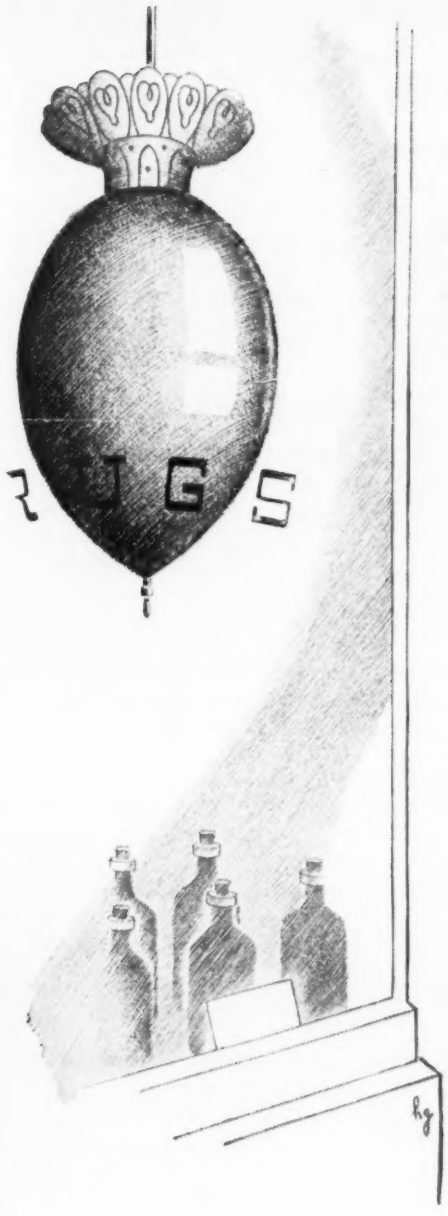
Designed for the safe handling of acid, it can be attached to acid carboys of 5 to 13 gal. It will withstand constant immersion in practically all grades and kinds of commercial acids and is unaffected by alcohols, oils, or water.

Electric Marker

A new electric marker has been announced by the Ideal Commutator Dresser Co., 1612 Park Ave., Sycamore, Ill. The marker is 6 in. long and weighs 10 oz. It is stated that the power of the cutting stroke has been increased 30% over previous models. An adjusting nut makes it possible to vary the impact so that it can be used to mark glass. Shaped to fit the hand, it can be held somewhat as a pencil and used to write.

Talk-A-Phone

A new inter-communication system which can also be used for paging has been announced by the Talk-A-Phone Mfg. Co., Chicago, Ill. Known as the HP-16 Power Booster, the device is capable of delivering a minimum of 15 watts "voice range" power.



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Dyes & Chemicals — PRODUCTS & PROCESSES

Plasticizing Resins

276-V2 and 276-V9; The Dow Chemical Co., Midland, Mich.

Two new plasticizing resins known as 276-V2 and 276-V9 are announced by Dow as the first of a new series of Styrene resins to come from its laboratories.

They are described as water-white, non-yellowing, viscous liquids which are chemically inert, said to possess an attractive combination of properties, to be soluble in all common organic solvents except the lower alcohols, and compatible with a wide variety of film-formers and plasticizers. The workability of these new resins with waxes, and their resistance to alkali were particularly pointed out as greatly expanding their uses, some of which are as coating materials for textiles.

New Gray Vat Dye

Calcosol Gray 2G Double Paste; Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J.

Calcosol gray 2G double paste is a new Anthraquinone vat dye (patents applied for) that has demonstrated exceptional fastness to light, chlorine, and water spotting, and, in recent field trials, has shown that it possesses outstanding level-dyeing properties.

Because of high degree of dispersion, it is of special interest for application by the pigment method of package dyeing and by the pad-jig method on cotton, viscose-rayon, and linen piece goods. Because of its excellent fastness properties, it is being recommended for all types of cotton and viscose-rayon materials.

Sterilizing Agent

Chloramine-B; Wyndotte Chemicals Corp., Wyandotte, Mich.

Chloramine-B is an organic active-chlorine compound, originally developed as a sterilizing agent. However, in addition to this property, it is said to be suitable as a germicide, deodorant, and mild bleaching agent.

The compound contains a minimum available chlorine content of 27.6%, and liberates chlorine slowly in water solution. This action is accelerated in the presence of acids. In neutral or mildly alkaline solutions, it can be used at elevated temperatures without rapid decomposition.

As a bleaching agent, it is said to be entirely safe for use on rayon fibers, cotton, and wool when used at the proper pH and in the proper concentrations.

Surface-Active Agent

Nonisol; Alrose Chemical Co., Providence, R. I.

Nonisol is a non-ionic ester-type surface agent which is miscible with water in all proportions in addition to being miscible in most organic liquids. It is stable in dilute organic acids, mild alkali, and metallic salt solutions. In addition to being compatible with soaps and other anionic or cationic wetting agents, it is not affected by water hardness and is a good solvent for grease and grime. Foam is reported to be negligible.

Nonisol can be used as a dispersant and solubilizer for acetate colors and other dyes (including pigments), a levelling agent for use with vat colors and direct dyes or cotton, and adjuvant for diazo dyes on cotton and rayon, a stripping assistant, a lubricant for slashing, a rewetting agent, a softener, and a desizing and scouring assistant.

One-Bath Repellent

Hydroxy Water Shield #7; Kali Mfg. Co., 427 Moyer St., Philadelphia 25, Pa.

This product is an aluminum-salt wax-emulsion water repellent, designed to be applied by the one-bath method. Its stability and compatibility with fungicidal agents is said to be excellent, and the company states that the product has been used extensively on military fabrics.

It is one of a line of Hydroxy Water-Shields, as the company makes a series of such products, designed to fit particular fabric or finish requirements.

Mill Maintenance — TO KEEP 'EM RUNNING

Sloughed-Off Filling Aided By Firm Bobbin

Preventing sloughed-off filling requires extra attention to details, principally upon the part of spinning fixers. Several suggestions pertinent to this subject is made in the October issue of *The Traveler*, published by the Victor Ring Traveler Co. The following points are made:

1. Sticking or binding lifting rods on a spinning frame causes the ring rail to hesitate in its upward stroke and build up too much yarn in one spot. This ring of yarn may slough off in the weaving operation.

To prevent binding rods, check them by moving them up and down a few times when the frames are full. If any are tight, take them out and clean them thoroughly; and clean out the bearings. Oil the bearing about once a week.

2. A Pitman roll that has a worn or flat spot will hesitate and cause a similar effect on building the bobbin. Pitman rolls should be checked and waste accumulations removed at least every other week.

3. If soft quills are being made, the tapes or bands should be inspected and slack ones cut off. Soft filling will slough off easily.

4. If the tapes are tight, the traveler on the ring making the soft quill should be changed. A light traveler may have gotten mixed with the regular-size travelers.

5. An improper taper on the quill will cause sloughing off. The taper should be long enough to place yarn in the first ring of the quill when the first layer of yarn is laid.

6. The last ring on the quills should determine the doffing time of the frame. The last layer of yarn should lie snugly in the ring so that the ring braces it. A ratio of three rounds on the upstroke to each round on the downstroke should produce a firm quill of yarn.

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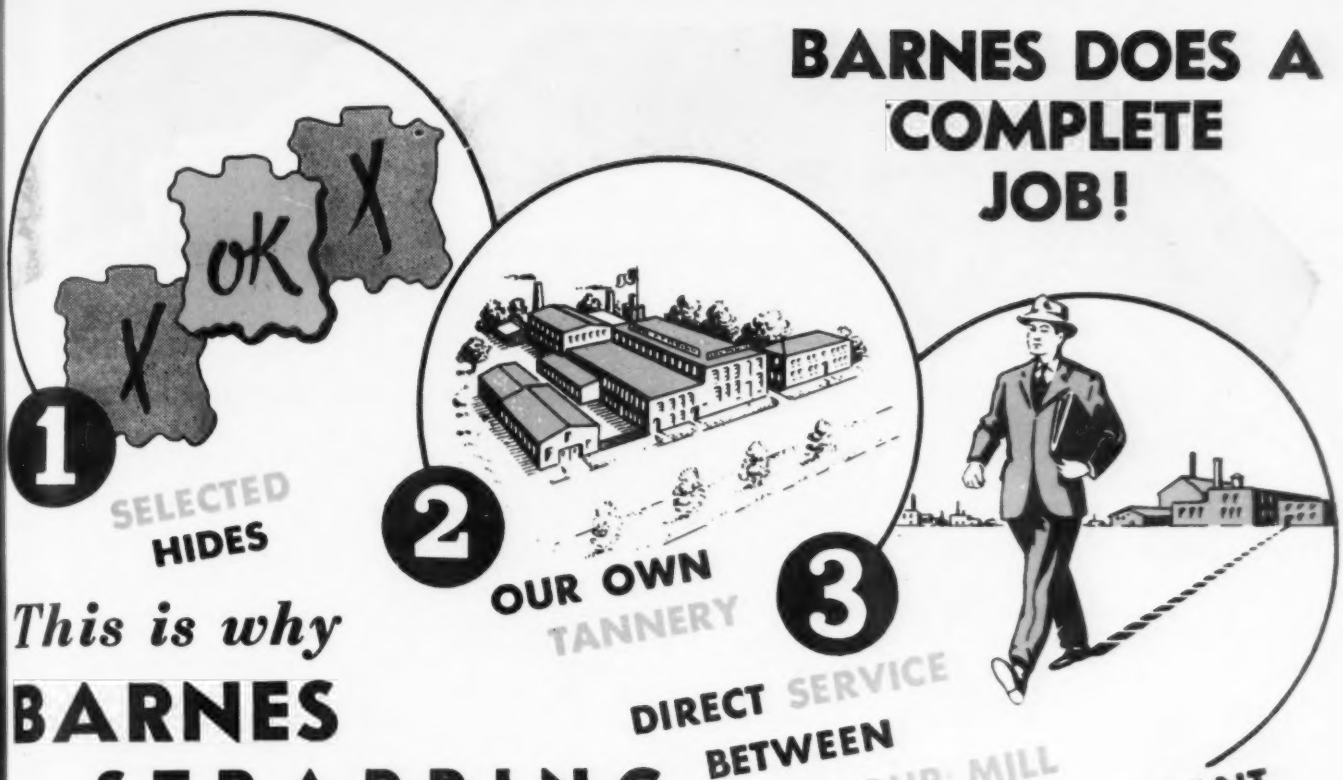

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At the right is shown the Barnes Gam-Oil Lug Strap—typifying the high quality of our complete line. Supplied in from 2 to 5-ply, thickness formed to fit pickerstick accurately Treated with special preparation and allowed to set properly before shipment so they will resist heat and oil. Withstand the most powerful throw of the shuttle, reducing noise, prolonging life of pickerstick. Slotted to exact specifications. Tests prove Barnes lug straps last from 2 to 4 times as long as any substitute.

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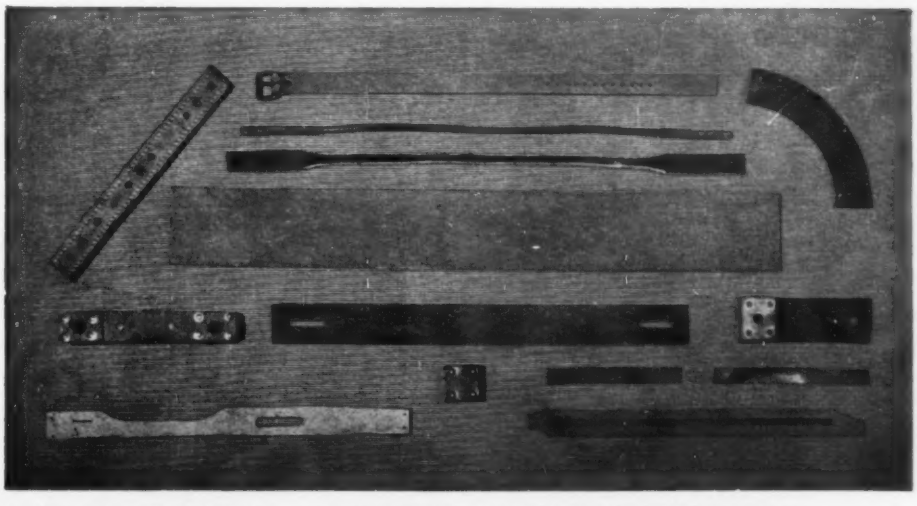

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Kinks AND SHORT-CUTS

A $25 VICTORY BOND FOR YOUR IDEA

A $25 Victory Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **VICTORY BOND PRIZE WINNER FOR DECEMBER**

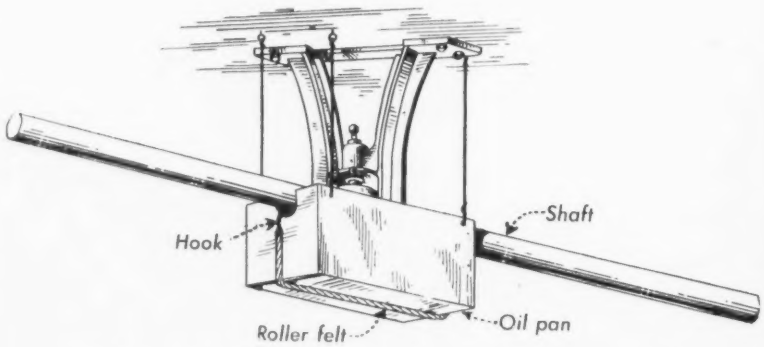
(October Contest)

Oil From Drip Pan Absorbed by Felt

Mills using oil pans suspended beneath the hanger bearings of overhead shafts often have trouble with oil dripping from the pans onto stock or machines below. We found that this trouble in our plant was caused by lint collecting on the inside of the pan and acting as a wick to convey the oil upward. When it reached the top of the pan, it ran down the outside and accumulated in drops.

To guard against oil dripping between scheduled cleaning periods, we attached a 1-in. strip of felt roller cloth to each pan, as shown in the sketch. A loom harness-belt hook was fastened to one end of the felt and hooked over the end of the pan below the shaft. The felt was passed under the pan and fastened to the other end by another hook.

The cloth will absorb approximately one cupful of oil before it needs replacing. *(K-415) E. Bentley, Montreal, Canada.*



The 1-in. felt strip is held against the ends and bottom of the pan

Rack For Water Race Built in Small Sections

Many mills use racks to prevent heavy trash from entering the canal or race which guides water into their generating turbines or pumps. Occasionally, these racks rust out and must be replaced. I have found that a rack built in the following manner efficiently serves its purpose.

Flat iron bars ¼ in. thick and 2½ in. wide are cut to the length desired for the depth of the rack. Holes for three tie bolts 18 in. long are drilled through the bars, as illustrated in the sketch, and the bars separated by spacing spools about 1¼ in. long. The bolt holes should be drilled off-center toward the back edge of the rack bars so that the spacing spools will not interfere with the teeth of the rake as it is drawn up the rack in cleaning it.

When the tie bolts are fastened, an 18-in. section of the rack is complete. As many of these sections as are needed to span the race must be constructed. In installing them in the race, they should be placed so that they will incline about 20° or 25° from the vertical toward the cleaning platform to facilitate cleaning.

The cleaning rake should be made with teeth that will fit into the spacings of the rack. Stops should be placed between the first two teeth at

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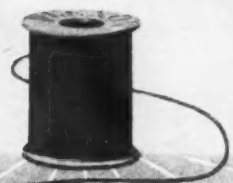

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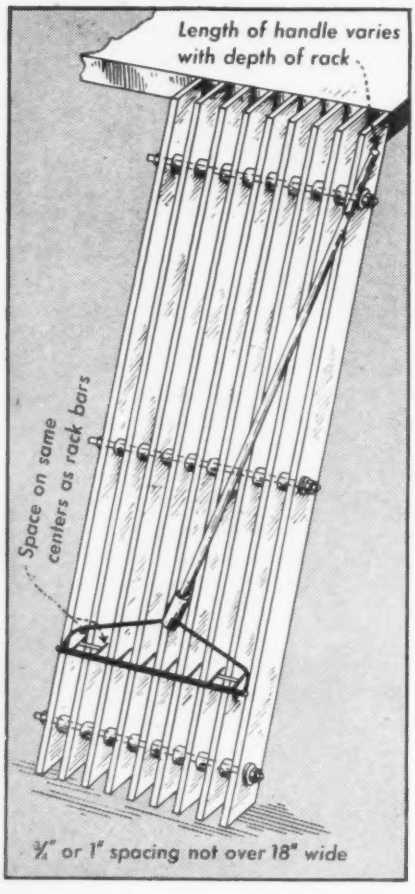
KINKS & SHORT CUTS
(Continued from page 148)

each end of the rake about 1 in. from the end of the teeth. These stops prevent the rake teeth from penetrating too far into the rack spaces and hanging on the spools. *(K-416) Richard Dilworth, Pawtucket, R. I.*



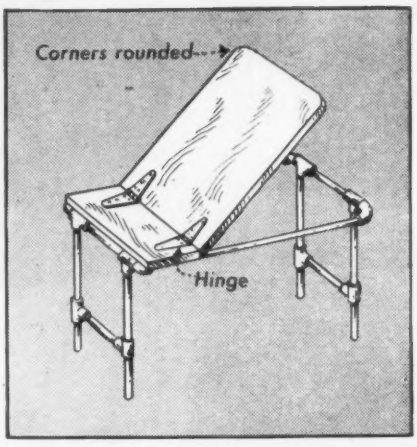
Building the rack in sections facilitates handling it.

Mending Bag Seconds Made Easier by Holder

In mending leno-woven laundry bags which have floats or mispicks, it is not practical to use an ordinary table because of the danger of fastening the two sides of a bag together. To avoid this, I devised the table shown in the sketch.

The table should be high enough for the operator to work in a comfortable sitting position, and a wooden bag holder should be hinged to the table top. For a bag 24x36 in., the holder should be 28x40x1 in., so that it will hold the bag taut while the operator is mending it.

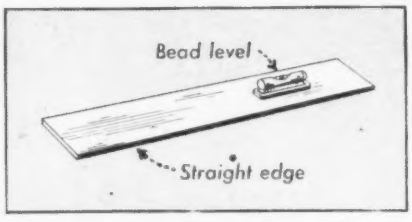
The unfastened end of the holder should be rounded at the corners so



The table legs can be made of wood or pieces of pipe.

that the open end of the bag will easily slip over it, and the entire surface should be made smooth and coated with shellac. *(K-414) Charles S. Bicksler, Lancaster, Pa.*

Level on Straight Edge Is Valuable Fixer's Tool



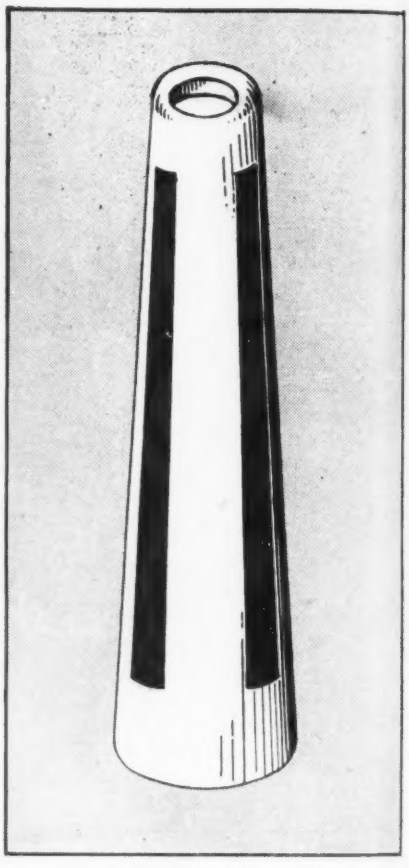
A small metal level soldered to a 12-in. straight edge is a handy tool for fixers who must level machine parts. The level should be fastened about 3 in. from one end. It is convenient for leveling or plumbing harnesses and reeds, for picking motion measurements, and for other aligning jobs. When using the straight edge, the attached level serves as a handy holder. (K-409)

Felt Oil Guard Used on Spinning Mule

When the spindle steps of a spinning mule are filled with oil and the mule put into operation, the high speed of the spindles tends to throw the oil out of the steps. Spots of oil will appear on the stock, machine, and floor. Besides making the job of cleaning the machine more difficult and causing oil spots on the yarn, this necessitates increasing the frequency of oiling the steps.

We solved the problem of slinging oil by using a strip of felt about ⅛ in. thick and about two-thirds the width of the step rail as an oil guard. Holes for the spindles were cut in the felt, and the strip was placed the length of the rail. Excess oil was absorbed by the felt. We found that the oil lasted longer, the machine stayed cleaner, and flying fibers were kept out of the spindle steps. *(K-368) Raymond Moody, Lewiston, Me.*

Stripe Helps Knitter Watch His Yarn Supply



Stripes on cone assist knitter in determining amount of yarn just before supply runs out.

When knitting yarn closely resembles in color the cone on which it is wound—as is usually the case—it is often difficult for the knitter to estimate just when the supply should be changed. If changed too soon, yarn is usually wasted; if too late, it runs out and causes a defective product.

To assist the knitter, the cone can be marked with vertical stripes, as shown, or with horizontal bands. In either event, the contrasting colors make the residual yarn on a cone easier to estimate. This is of especial importance when using nylon, as it is not only relatively iridescent but also costly if wasted or if the product (hosiery) is ruined.

This idea is not original with me, but it is one that we knitters would like to see used more widely. *(K-418)*

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KINKS & SHORT CUTS

(Continued from page 150)

Extra Loom Warp Ends Wound on Take-Up Spools

Extra warp ends on the loom beam, resulting from various causes in the warping and weaving operations, present a source of trouble from tangled warp yarns causing broken ends. The use of a spool, such as a twister spool, as a take-up for these extra ends will prevent their tangling and damaging the warp.

Bolt a piece of rod to the outside of the loom samson to serve as a spindle and place the spool on it. A drive band can be made from a single strand of tie-up cord by passing it over the crankshaft near the handwheel as the drive shaft. If the spools are not equipped with a weight groove, it will be necessary to place a twister whorl on the spindle to act as a driver. *(K-294)*

Empty Cone Used To Line Yarn With Guide

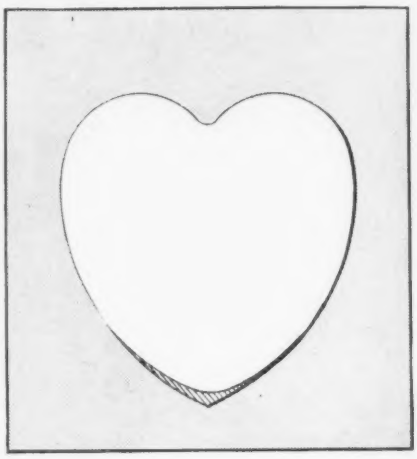
On some models of vertical high-speed warper creels, it is frequently desirable to run the yarns from two cones through the same guide. Since the yarn is pulled over the end of the cone, it is necessary to line up the extra cone with the other guide.

The accompanying sketch illustrates a simple way of placing the cone on the holder so that it will be in line with the adjacent guide.

An empty cone is cut as indicated by the broken line, and the base of the cone discarded. The cone top is placed over the holder with the low side toward the adjacent holder. This will cause the top of the cone to incline toward the desired guide. A cone of yarn placed over this cut cone will incline in the same manner. *(K-332)*

Gene Mills, Poynette, Wis.

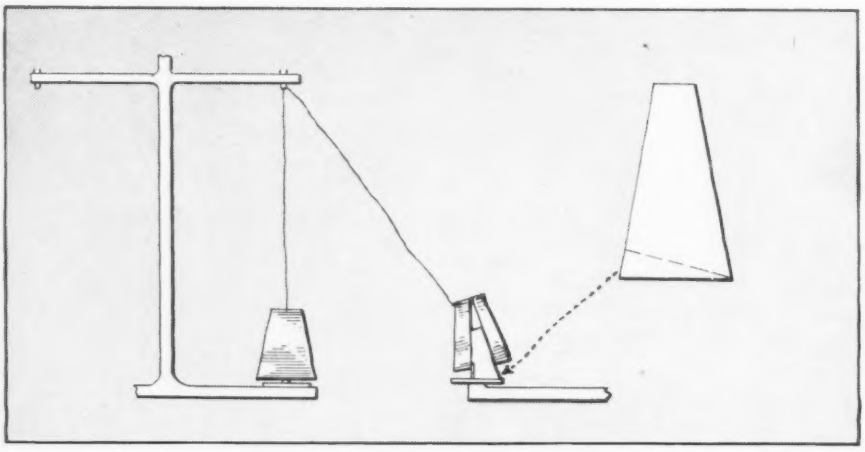
Filling-Cam Point Rebuilt By Welding



Cover a sufficient area of the point to assure proper shape after machining.

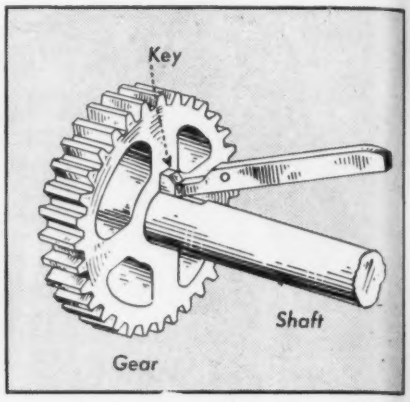
After a long period of use, the point of a cast-iron filling cam on a spinning frame will wear off until it is so round that it will permit a slight dwell of the ring rail before the direction of the stroke is reversed. This will cause an uneven taper of the bobbin; and in extreme cases, a knot of yarn will be formed at the base of the taper.

A cam in this condition can be repaired so that it will continue to give service by building up on the point. Sufficient welding metal should be used to permit the excess to be machined off so that the cam point will provide a smooth, correctly shaped working face. *(K-417)*



Use the top of the cut cone as a full-cone holder.

Drift Punch Made From Knock-Off Lever



It is often difficult for mechanics to purchase satisfactory punches for driving heavy keys from gears, and I have resorted to the practice of converting loom knock-off levers into suitable punches. Cut off the smaller end of a discarded lever and grind the remaining stub to a square face. Levers can be cut to different lengths and shaped differently to serve various purposes. (K-407)

Extended Oil Pipes Speed Oiling of Bearings

Oiling the middle cylinder bearings on a spinning frame can be done more easily and with less loss of oil if an oil pipe is extended from the cup of the bearing upward through the bottom creel-board.

The pipe should be bent at the upper side of the creel-board and extended to the front roll so that the oiler can easily reach it with the spout of his oil can. They should be placed so that both frames in an alley can be oiled at one trip, and painted a contrasting color to make their location easily seen. *(K-374)*

Holder For Stone Aids Reed Polishing

When cleaning loom-harness reeds to remove rust or to smooth out small nicks, it is customary to hold the reed stone in the hand and apply pressure. This action often tires the hand muscles, and insufficient pressure may be used to make a satisfactory repair. The wooden holder shown in the sketch provides a means for holding the stone and allows the user to apply the required pressure without tiring the muscles.

A piece of broom handle 2 in. longer than the reed stone is cut from a worn-

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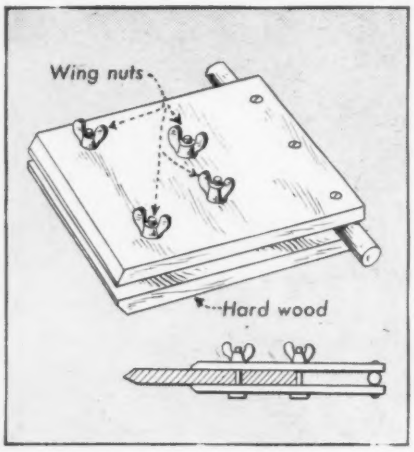
KINKS & SHORT CUTS

(Continued from page 152)



Reeds can be polished without tiring the muscles of the hand.

out broom, and two strips of ¼-in. hardwood or plywood are cut to the same length. They should be approximately the same width as the stone. One side of each strip is screwed onto the piece of broom handle to form a slot into which the stone is placed. Four wing nuts, one at each end and two at the back of the stone, serve as stops to prevent the stone from slipping and as screws for tightening the wooden holders against the stone. *(K-408)*

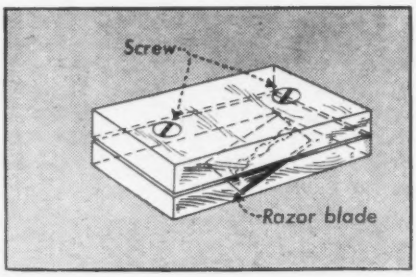
Filling Breakage Reduced With Fur

Crepe filling often breaks near the filling bunch at the back of the quill. An easy way to prevent this is to paste a small piece of fur in the shuttle so that it touches the bare space of the quill behind the bunch. The fur keeps the filling from shifting back to where it will either tangle or be cut by the clips holding the bobbin, if clips are used. *(K-268)*

Razor Blade Used For Opening Cartons

Many of our cardboard cartons were torn in being opened in the warping and bobbin-winding department; and, although stock checkers were constantly requested to use care in opening so that containers could be reused for piece shipments, the damage continued until the gadget shown in the sketch was put into use.

The device consists of a razor blade inserted between two pieces of wood and secured with wood screws. The blade projects far enough to penetrate the thickness of the cardboard and is used as a knife to cut the carton. The clean incisions it makes permit the carton to be opened and reused by sticking tape over the cuts. *(K-406) H. E. Wenrich, Berwick, Pa.*



A corner of the razor blade serves as a cutting edge.

Machine Guards Made From ½-In Pipe

In most mills, there are machines in every department which are frequently bumped by a box or truck being pushed from one alley to another. In our plant, the lay sword on one loom was broken three times by trucks being pushed from the stock room.

A simple guard for machines in vulnerable spots can be made from ½-in. pipe. The pipe can be bent into the shape needed; and the guard can be fastened in place by threading the inside of the pipe ends and bolting them directly to the machine, or it can be fastened to a stand bolted to the floor. *(K-410)*

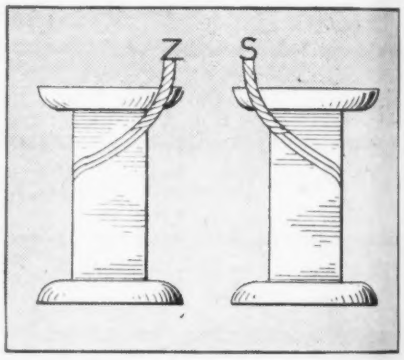
Shuttle-Guard Screws Held Tight by Springs

The screws which hold the shuttle guard to the lay of a loom sometimes become loose as a result of vibration and will finally shear off and require replacement. Unless a tightly fitting screw is used, the second screw will not last long.

I have made a practice of using a ½-in. longer screw placed through a coil spindle-tension spring in making a replacement. This gives a tight spring tension against the guard brackets and will stop the cutting of the screws. *(K-412) Clifford Springman, Montoursville, Pa.*

Direction of Unwinding Used to Modify Twist

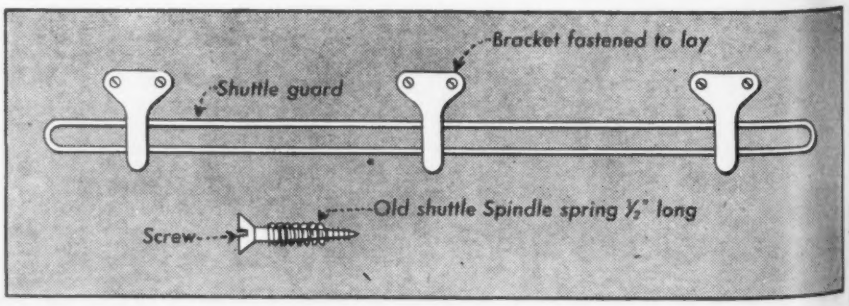
Frequently, it is important that a little twist be added or deducted from a thread, especially when winding it from a bobbin to a quill. All over-end deliveries, such as quills, either add or subtract twist; and knowing the direction in which you want to modify the amount of twist, you can have the yarn unwound from the end which will give the result desired. *(K-411) Edward Maag, New York, N. Y.*



One turn of twist is added to or subtracted from the yarn for each round unwound over the end of the package.

Drill and Wire Used For Cleaning Oil Pipes

Clogged oil pipes can be cleaned by mounting a piece of stiff wire in a ratchet drill and inserting the rotating wire into the pipe. The wire should not be too stiff to work around the curve of a crooked pipe. *(K-384)*



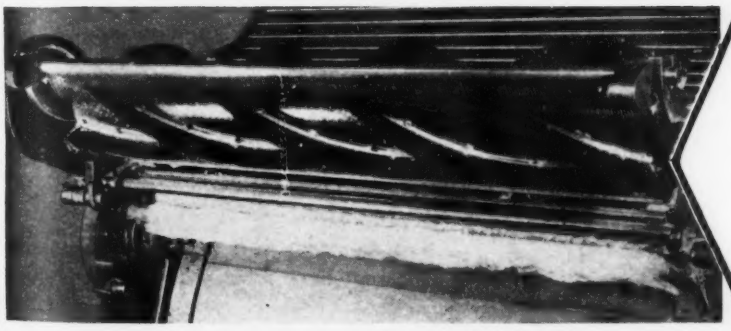
A ½-in. spring absorbs the shock of vibration and increases the operating life of the screw.

"FULLERGRIP" is the Fuller Brush Company's patented method of gripping brush materials in a rust-resisting metal backing. The machine-controlled placing of materials in the metal backing results in a uniformly solid brush face, which can be fastened onto metol cores, or arbors. The density of the brush and the durability of the holding method means long life, better performance and serviceability.

All types of Brushes, Machine or Hand, for Textile and Finishing Mills.

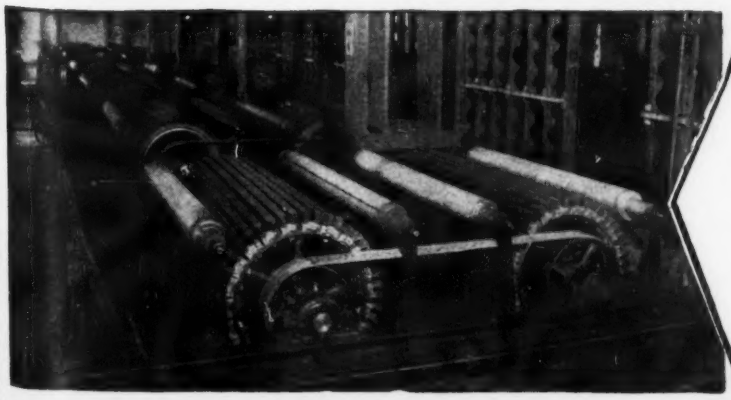
WORSTED-CARD BRUSHES

FULLERGRIPT Worsted Card Brushes, because of the densely packed brush materials, push the wool—*all* of the wool—down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal. (See cut.) Fullergript cylindrical brushes are proving helpful in three ways on worsted cards: As *feed roll brushes* to start the wool properly in the teeth of the first lickering; as *Morel brushes* to disentangle the burrs from the wool; as *transfer brushes* to carry the wool to the Morel roll and disentangle the burrs at the same time.



COTTON-FLAT CARD-BRUSHES

RIGID, metal-backed brush strips, pre-formed to the correct degree of spiral, can be easily attached to your present wood cores. The density of the brush with no gaps, prevents the accumulation of lint or lumps on your cards, and the stripper is cleaned more thoroughly. This means better carding.



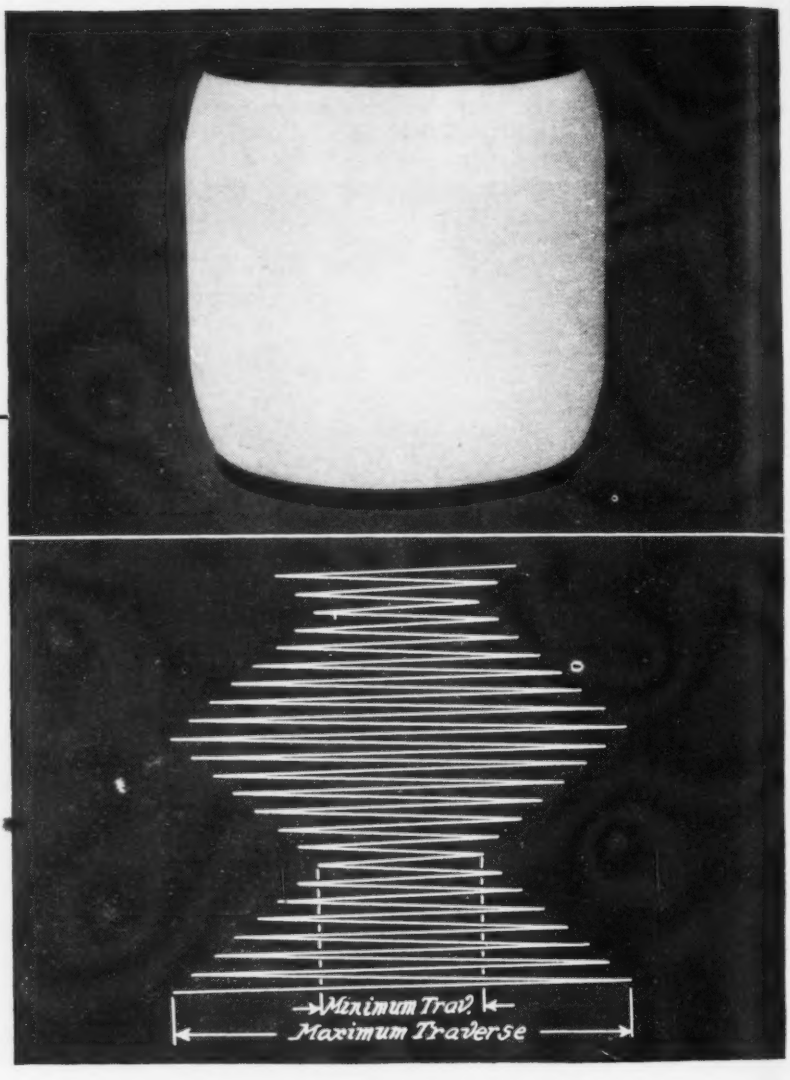
THREAD DRESSERS

DISCARD wood lags with their variation in weight, warping, splitting, and falling tufts. Use Fullergript for better ventilation and increased production. Their are no gaps or tufts in Fullergript to allow threads to ride on the core. These brush strips are set in pairs equally spaced around the periphery of the spiders, and are easy to install. Their production life is longer because of the dense, massed bristle filling.

THE FULLER BRUSH COMPANY

INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.

HOW TO MAKE NYLON BEHAVE

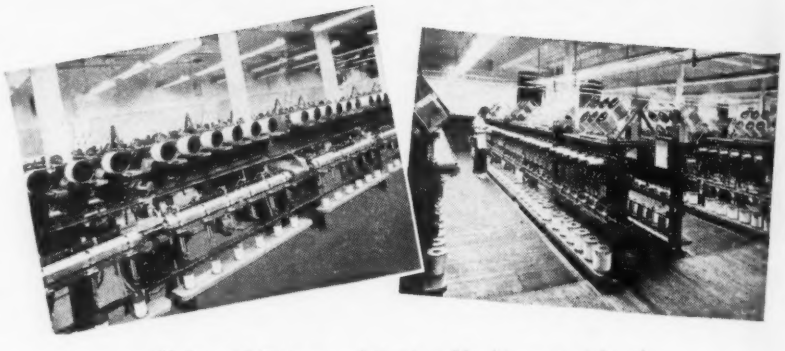


Experience in throwing mills has proved that the Universal Sizing Tube is the most satisfactory supply for the coning machine... permitting highly-elastic nylon yarn to deliver freely on the coning machine *without an intermediate redraw operation.*

A unique method of traversing the yarn is responsible for the superior shape of the tube. A special heart-shaped cam on the Universal No. 250 Sizing Machine lays the yarn on the large-diameter tube with alternately long and short traverses, building a package with tapered selvedges.

Mills operating Universal Sizing Machines also use the Universal No. 50 Coning Machine to build pineapple cones which are considered the ideal shape of package for supplying knitting machines with nylon yarns.

Both machines have been designed so that the yarn travels in almost a straight line, past a minimum of contact points and with minimum change in yarn speed—thus limiting variations in tension which might affect the quality of the knitting.



Universal Sizing and Coning Machines at Atlantic Rayon Corporation's Plant in Lowell, Mass.

Universal Winding Company

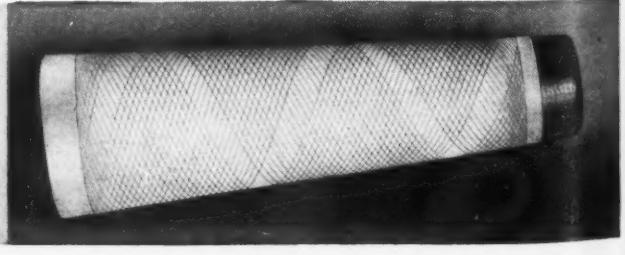
LEESONA

Reg. U. S. Pat. Off.

PROVIDENCE
BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

23-5-5

MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRECISE-WOUND ON THE FLEXIBLE 50



LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

The Annual Christmas Problem

Gifts from the help—should they be given free hand, restrained or banned?

SAY, PETE, I'VE LEARNED BY THE GRAPEVINE THAT MY HELP ARE GOING TO GIVE ME A NICE 16-GAGE PUMP GUN FOR CHRISTMAS. I'LL BET YOUR ROOM CAN'T SHOW ITS STUFF LIKE THAT
I'D BE ASHAMED IF I WERE YOU, BILL, INSTEAD OF HAPPY OVER IT. I THOUGHT YOU KNEW ENOUGH TO KEEP OUT OF SUCH GRAFT.
1
GRAFT MY EYE PETE! IT HELPS THE MORALE OF THE DEPARTMENT TO CONTRIBUTE TO A DECENT REMEMBRANCE FOR THE BOSS
YOU FORGET, BILL, THAT MANY OF THE WORKERS CAN'T AFFORD TO CONTRIBUTE TO A GIFT LIKE THAT AT A TIME WHEN THEIR OWN HOME DEMANDS ARE HIGH.
2
NO ONE GIVES MORE THAN HE WANTS TO, I'M SURE.
YOU'RE WRONG BILL—THE LEADERS SET THE PACE AND THE ANTE IS $1 OR MORE. I LIMIT MY WORKERS TO MAXIMUM OF 25¢ CONTRIBUTIONS IN ANYTHING THEY WANT TO DO FOR ME ON CHRISTMAS.
3
I'VE HEARD YOU TWO FELLOWS AND I'D SAY YOU'RE BOTH WRONG. I MAKE A RULE IN MY DEPARTMENT "NO GIFTS TO THE BOSS". YOU KNOW SOME COMPANIES HAVE OUTLAWED THE APPLE-POLISHING PRACTICE. BUT THERE'RE MANY SIDES TO THE QUESTION. READERS! WON'T YOU TELL US WHAT YOUR EXPERIENCE HAS FOUND BEST?
4

Letters From Readers

Re-Training a Stigma Upon Veterans

"Training for a Mill's Veterans"
(Pete & Bill, Nov., 1945)

Dear Pete & Bill:

Really, I cannot agree that the mill should re-train its veteran workers after they have withstood the ravages of War, grimvisaged; and after they have faced death on foreign soil. It occurs to me that some of the veterans, especially the better class and the more adept, might get the impression that the mill heads were casting a reflection and a stigma upon their merits.

So I could in no wise endorse such a movement. In fact I whole-heartedly disapprove the proceeding, with the best apologies to Pete. It might result in disunion in the plant. (PB1004)

Must Limit Workers in Working Hours

"The Wandering Employee"
(Pete & Bill, Oct., 1945)

Dear Pete & Bill:

It's often been said "There is time to play and time to work." This, it would seem, could readily apply to a wandering employee in a factory. Yes, it might be that this employee is on an important mission yet, to the onlooker who hasn't been told as to what this mission is, it appears "playtime" to all intents and purposes.

Thus it falls upon the lap of management to dissuade any wandering about the mill by any employee other than overseers, supers, etc. Morale building is most essential in successful operation. However, the employees who are within sight of a "circulating employee" are due for a let-down. The policy of the management should, therefore, call for a strict adherence to one's job at all times of the working day. In cases of emergency the telephone could very easily be the conveyor of messages from department to department.

Yes, limitations should be placed

upon the workers in a mill. In the final analysis it tends to be of mutual advantage to management and labor. With such policy can management look forward to more successful operation. (PB1002)

Bring Veterans Up-to-Date

"Training for a Mill's Veterans"
(Pete & Bill, Nov., 1945)

Dear Pete & Bill:

I most certainly agree with Pete in his plan to re-train returning service men who are coming into his department. Changes, which seem small to the people on the job, soon add up. Recently I visited a mill where I used to work, but which I had not seen in about four years. I hardly knew the place. Some of our service men have been away three or four years, so the changes will be just as apparent to them as were the changes in the other mill to me.

Methods employed in training these veterans would vary in different mills. In a small organization this might consist simply of a talk in the overseer's office and a tour of the mill during which many changes could be pointed out. In a larger mill classes might be conducted for these men before they are put to work. But by all means bring the veterans up-to-date before turning them loose to shift for themselves. (PB1001)

Supervision Is First Duty

"Production or Research"
(Pete & Bill, Sept., 1945)

Dear Pete & Bill:

My observation is that the supervisor with a bent for research is really leaning toward his first love, has a tendency to go "all out" for it, and supervision suffers.

I once worked in a mill where the maintenance man had a hard time beating the superintendent to a repair job. Frank had plenty of ideas for improvement in the original construction of a machine. It was difficult to keep him in his own realm, and it was generally conceded that much operating time was lost when Frank wanted to try out a new idea.

As I look back on it, I can see where Frank cost the firm money. As it happened, he also did considerable of the purchasing of department supplies, but quite often, when a salesman with timely information or a helpful hint called, Frank, wrapped up in a machine, was indisposed to see him.

I would permit the supervisor the privilege of experimentation if supervision is not impaired by doing so. (PB1003)

Books of Interest

New Methods of Evaluating Textile Properties

TEXTILE FIBERS—An Engineering Approach to Their Properties and Utilization, by Harold DeWitt Smith; American Society for Testing Materials, 260 South Broad St., Philadelphia; 62 pages; $1.00.

According to Dr. Smith in this book which is the published text of his Edgar Marburg Lecture, "—an engineering approach to the design and utilization of textile fibers, yarns, and fabrics is needed in order to blend textile craftsmanship with modern science if the textile industry is to exploit its opportunities and meet its obligations in the world of today and tomorrow."

An entirely new light has been thrown on the interpretation of fiber properties by Dr. Smith as he has interpreted them in the terms of the engineer, and this will permit a better utilization of textiles by industry in general.

Analysis of Organized Labor

ORGANIZED LABOR, by Harry A. Millis and Royal E. Montgomery; McGraw-Hill Book Co., 330 West 42nd St., New York 18; 890 pages; $6.00.

In line with the present trends of textile executives in keeping posted on labor, this book will provide an authoritative source of information on the organization and the activity of labor unions in general. Topics discussed are: American trade-union history 1890-1920; American unionism in the 1920's; American unionism since 1930; trade-union structure, government, and inter-relationships; and trade-union institutionalism. The union in industry; the theory of collective bargaining; trade-union policies and methods; trade unions, the laws, and the courts; the problem of strikes and lockouts; conciliation and arbitration of labor disputes; labor and politics; and employee representation plans, and independent unions. While the book is devoted to a discussion of practically all unions, considerable reference is made to textile unions and textile problems.

Handbook on Plastics and Resins

THE TECHNOLOGY OF PLASTICS AND RESINS, by J. Philip Mason, Ph. D., and Joseph F. Manning, Ph. D.; D. Van Nostrand Co., Inc., 250 Fourth Ave, New York; 482 pages; $6.50.

Textile chemists interested in plastics, coatings, and laminates will find this book good for general reference purposes in obtaining a basic understanding of these fields. The first section deals with macro-molecules and their properties, the second with plastics, and the third with fabrication, under which coatings are considered.

Guide for Designing Career

FASHION IS OUR BUSINESS, by Beryl Williams; J. B. Lippincott Co., Washington Sq., Philadelphia; $2.00.

This book covers, in brief biography, the careers of famous American designers and points out how they entered the field of design. Intended for the person just leaving school, this book offers a guide by covering in story form the background, training, and achievement of twelve American fashion designers.

OTHER PUBLICATIONS

CUSTOM HOUSE GUIDE, 1945 edition; Custom House Guide, Box 7, Station P, Custom House, New York 4; 1,522 pages; $20.00.

TIME STUDY AND MOTION ECONOMY; National Foremen's Institute, Inc., Deep River, Conn.; 76 pages; $2.00.

HOW TO DO BUSINESS WITH RFC (Also lists items the RFC has to sell, among them are cotton looms, printing machinery, ginning machinery, and textile fibers); Reconstruction Finance Corp., Washington, D. C.; 32 pages.

FABRICATING METHODS FOR LUMARITH, CELLULOID, AND SIMILAR THERMOPLASTIC MATERIALS; Celanese Plastics Corp., Dept. A, 180 Madison Ave., New York 16; 136 pages; $1.00.

STATE LABOR LAWS FOR WOMEN WITH WARTIME MODIFICATIONS; United States Government Printing Office, Washington, D. C.; 110 pages; 15¢.

For a cleaner textile world . . .

SULFRAMIN DT POWDER*

In a world that grows cleaner day by day, textile mills are depending more and more upon the chemical magic of Sulframin DT. For Sulframin DT is an unusually efficient detergent; and is very economical besides.

Chemically classified as an alkylaminosulphate, Sulframin DT functions effectively in almost every phase of boiling off and drying procedure. As an emulsifier and foaming agent it performs ideally; it dissolves readily and blossoms into rich suds even when diluted by ten thousand parts of water. Equally important, the efficiency of Sulframin DT isn't lessened when used in hard water.

Moreover, Sulframin DT is unaffected by the presence of lime and magnesium salts; it resists both acids and alkalies; and even after long storage, it does not deteriorate. Sulframin contains no soap; consequently rancidity and stains —so common when soap is used as the emulsifier —no longer present a textile problem. And in the dyeing industry concerned with processing rayons and acetates, the thorough dispersing qualities of Sulframin DT are utilized to particular advantage.

If you require more detailed information, phone or write!

ULTRA CHEMICAL WORKS

INCORPORATED

Paterson, New Jersey • Chicago, Illinois

OTHER ULTRA CHEMICAL PRODUCT DEVELOPMENTS: SULFRAMIN DT PASTE • SULFRAMIN DR PASTE
ULTRAMINE • DETERGOL • ALBUTEX • ALBUTINE • DERMASOL • ULTRA GLOSS B • DULLITE T

*Sulframin DT is an exclusive formula—U. S. PAT. PENDING • Sulframin DT Reg. U. S. Pat. Off.

CLINTON

STARCHES

FOR ALL
TEXTILE PURPOSES

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QUALITY
AND
SERVICE

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COMPANY
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Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Nylon Production Reported From England

The manufacture of nylon in Great Britain now shows signs of fairly rapid advancement, considering the difficulty of obtaining labor. The first British production of nylon was in January, 1941, by British Nylon Spinners, Ltd., sole manufacturers of nylon yarn in the United Kingdom.

The center of nylon manufacture has, so far, been at Coventry; but it is said that some of the government factories recently acquired by Courtaulds also are to be devoted to this purpose. It is thought that besides the factory being built at Carrickfergus, Northern Ireland, for rayon staple, another will be built there for nylon. Courtaulds has admitted the likelihood of two factories being built and has stated that it is its intention to establish a model village. The expenditure already allocated is £300,000, while the number of workers to be employed is estimated at 1,000.

The district is in the center of the linen-processing region, and labor is ordinarily abundant at rather lower rates than in Great Britain. It is well known that the British government desires that industries connected

YARNS MAY BE SYNTHETIC . . BUT STATIC TROUBLES ARE REAL!

ELIMINATE ALL STATIC WITH THE CHAPMAN ELECTRIC NEUTRALIZER

ach new synthetic, each new method, each new machine — has a new set of roblems — some easily solved, others not so simply. For years the problem f static in textile mill routine was costly, time-devouring, constantly roublesome. Humidity controls are not the complete answer for static. And ccess humidity is expensive.

oday, the Chapman Electric Neutralizer, in thousands of plants and mills doing away with all static troubles on which static — from any cause — ay otherwise slow down production or prove a nuisance or an expense.

hapman Electric Neutralizers are eliminating static on:

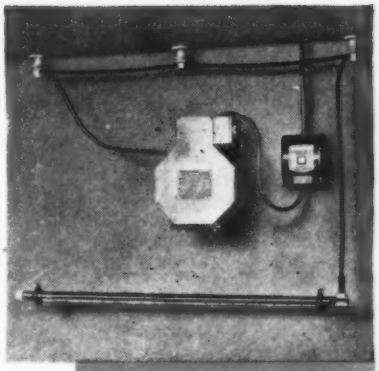
OOLEN CARDS	WORSTED CARDS	FOLDERS
IGH SPEED SLASHERS	GARNETTS	NAPPERS
IGH SPEED WARPERS	COTTON CARDS	DRYERS

. and other machines, in many different operations, to speed production. nd now, Chapman Neutralizers will expedite new peace-time output.

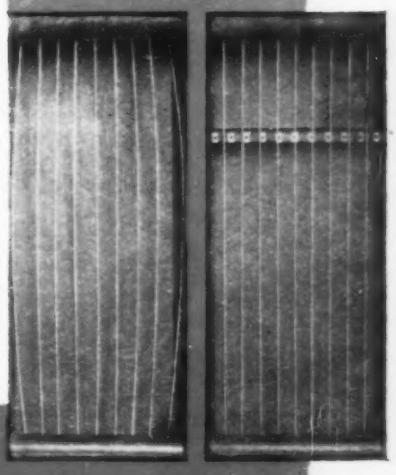
OW IT WORKS — A Chapman Power Unit or transformer produces a orrective alternating charge at suitable tension, which is delivered through e Chapman Inductor Bar *to the material.* Whether the static charge is posi- ve or negative, it is instantly neutralized, safely, by the corrective charge om the Inductor Bar.

TOP COSTLY DELAYS! SPEED PRODUCTION BY ENDING STATIC UISANCE ONCE AND FOR ALL!

all upon the Chapman Engineering Service! Write us! We will analyze our specific static problems.

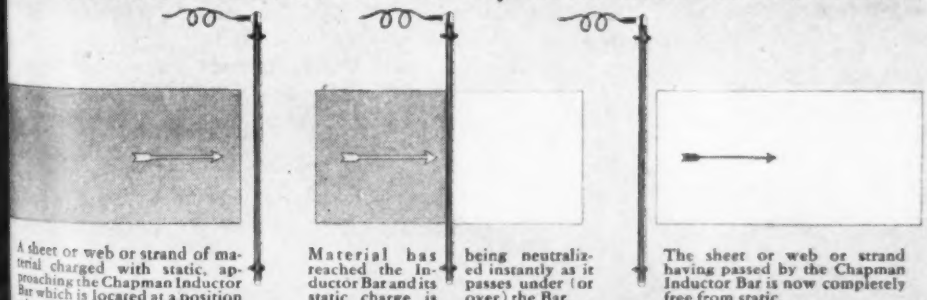


WOOLEN CARDS
— all equipped with Chapman Static Neutralizers.



WOOLEN ROVING
before and after static charges are eliminated.

FUNCTIONAL OPERATION OF THE CHAPMAN NEUTRALIZER



A sheet or web or strand of material charged with static, approaching the Chapman Inductor Bar which is located at a position where static causes trouble.

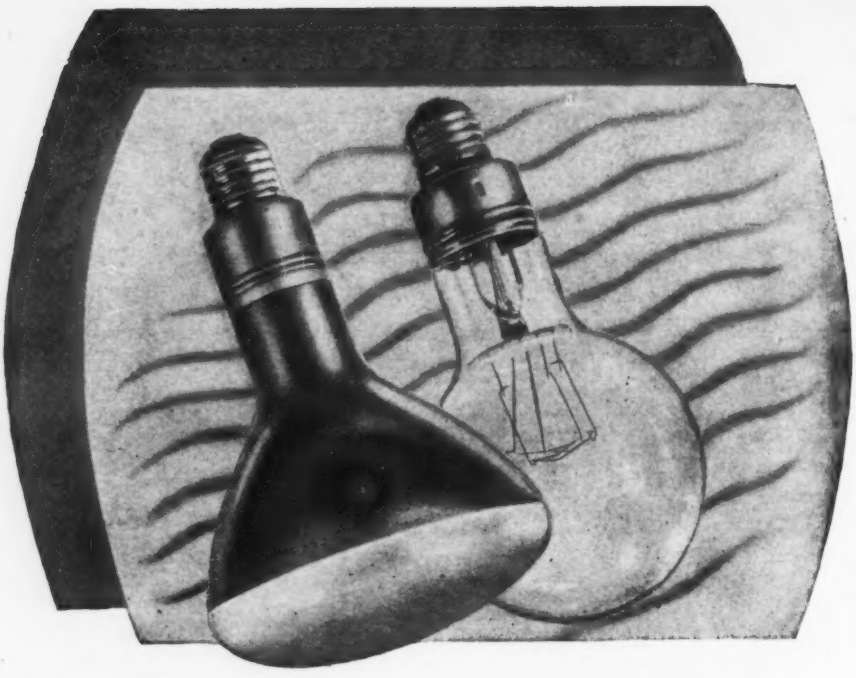
Material has reached the Inductor Bar and its static charge is being neutralized instantly as it passes under (or over) the Bar.

The sheet or web or strand having passed by the Chapman Inductor Bar is now completely free from static.

CHAPMAN ELECTRIC NEUTRALIZER COMPANY

ESTABLISHED 1904

PORTLAND, 6, MAINE



SAVE 50-95% IN DRYING TIME WITH INFRA-RED HEAT!

This amazing speed-up now possible with Wabash-Birdseye Infra-Red Heat Lamps

It's a fact! You can actually reduce drying time in fabrics finishing up to 95% with Infra-Red. Sanforizing and other processes that involve drying are done not only faster but better by this deep penetrating heat as supplied by Wabash-Birdseye Infra-Red Heat Lamps.

Be sure to specify Wabash-Birdseye Lamps. They're inexpensive . . . easy to maintain . . . produce more uniform heat. They are standard for most Infra-Red production line equipment.

You can adapt your present equipment for Infra-Red drying with only minor alterations. But remember . . . for maximum efficiency and economy, your Infra-Red installation should be engineered by an accredited manufacturer of this equipment. We will gladly furnish names of such manufacturers. Address—Wabash Appliance Corporation, 345 Carroll Street, Brooklyn 31, N. Y.

WABASH-BIRDSEYE

First in INFRA-RED

with the use of nylon and other raw materials should be started in, or comparatively near, the former "depressed areas," notably the coal-mining districts, where unemployment was formerly so rife. Therefore, the entry of Courtaulds into Wales must be regarded as of possible nylon significance. *(R-200) P. Ripley*

Some Supervisors Expect Worker Favors

In my opinion, poor labor relations have developed a great many times—as brought out in the letter "Supervisors Can Wreck Labor Relations in Mill," page 166, October, TEXTILE WORLD—as a result of the egotistical actions of a supervisor who has overexerted his authority.

I believe, however, that today conditions in a great many plants have changed to the extent that the supervisor creates poor labor relations by forgetting that he is a part of management and encouraging employees to make demands upon management which are sometimes unreasonable. This, of course, is apt to be done under cover; but in a great many plants, without doubt, it is true. I believe that this condition is encouraged by the fact that, directly or indirectly, supervisors are more apt to benefit from concessions granted employees than they are from developments of economy. This results in destroying the management attitude which a supervisor should have. *(R-196) Ray N. Robator, Sanford, Me.*

Employees Receive Mill Financial Report

Avondale Mills, Sylacauga, Ala., has reported to its employees on the financial results of its fiscal year ended July 31, 1945, during which customers paid the company $43,503,849. A pie chart published in The Avondale Sun indicates the following dispersal of each dollar received by the company.

Cotton and other raw materials	49.30¢
Wages and salaries	25.73¢
Taxes	7.32¢
Supplies and repairs	6.88¢
Selling commissions	2.78¢
Freight and discounts	2.37¢
Power and fuel	1.83¢
Other expenses	1.35¢
Dividends to stockholders	1.16¢
Depreciation	0.85¢
Retained for future needs	0.43¢

The wages and salaries item of 25.73¢ was broken down as follows: Employ-

The Marquette METAL PRODUCTS CO.

CLEVELAND 10, OHIO

Manufacturers of: HYDRAULIC AND ELECTRIC WINDSHIELD WIPERS FOR AIRCRAFT
HYDRAULIC GOVERNORS FOR DIESEL ENGINES • ROLLER BEARING TEXTILE SPINDLES • FUEL OIL PUMPS
AIR COMPRESSORS • PRECISION PARTS AND ASSEMBLIES

Southern Representative: Byrd Miller, Woodside Bldg., Greenville, S. C.

Air Express speeds the day she'll listen to HER NEW RADIO

Yes, as industry races against time to make more and more radios, irons, washing machines and other goods the public wants and needs, Air Express is helping to get them faster.

Here's how. When a plant makes production changes, new tools, dies, machinery and parts are needed *fast*—critical material that is obtained via Air Express in a matter of hours. With such delivery speed, industry as a whole is gaining millions of man-hours in getting consumer goods back on the market and into the home.

Specify Air Express-a Good Business Buy

When time means man-hours saved, production gained, a customer made — Air Express "earns its weight in gold" as thousands of firms, large and small, have learned.

Shipments travel at a speed of three miles a minute between principal U. S. towns and cities, with cost including special pick-up and delivery. Same-day delivery between many airport towns and cities. Rapid air-rail service to 23,000 off-airline points in the United States. Service direct by air to and from scores of foreign countries.

TYPICAL RATE CHART

AIR MILES	2 lbs.	5 lbs.	25 lbs.	40 lbs.	Over 40 lbs. Cents per lb.
149	$1.00	$1.00	$1.00	$1.40	3.5
349	1.04	1.25	2.63	4.20	10.5
549	1.11	1.52	4.38	7.00	17.5
1049	1.26	2.19	8.75	14.00	35.
2349	1.65	4.03	20.13	32.20	80.5
Over 2350	1.68	4.20	21.00	33.60	84.

AIR EXPRESS

GETS THERE FIRST

Write today for "Jig Saw Puzzle," a booklet packed with facts that will help you solve many a shipping problem. Air Express Division, Railway Express Agency, 230 Park Avenue, New York 17. Or ask for it at any Airline or Express office.

Phone AIR EXPRESS DIVISION, RAILWAY EXPRESS AGENCY
Representing the **AIRLINES** of the United States

ees regular pay, 22.22¢; employees profit sharing trust, 2.33¢; employees bonuses, 0.82¢; paid to company officers, 0.36¢. (*R-204*)

"Why-Don't-They" Page Suggested by Reader

My suggestion is that TEXTILE WORLD install a page called the "Why-don't-they" page similar to that in some of the general magazines. On this page, you could publish questions asked by your readers regarding suggested changes and improvements in the processing of textiles that I feel would contribute to the progress of the industry, although some, no doubt, would be impractical.

To illustrate, and if possible to be the first contributor, kindly permit me to ask:—*Why Don't They* produce a spinning ring traveler that will withstand a speed above a mile a minute? We could then increase our front-roll speed and also the spindle speed, provided the spindle would be free from oil pumping. As I understand it, the spindle will pump oil if it is run over 10,000 r.p.m. and the traveler will burn off if run over a mile a minute.

Some one, so the story goes, made a traveler from animal horn which could be run much faster than metal travelers; but whether this is just a story or a fact I cannot truthfully say.

It would also be an improvement if an oilless spindle could be made practicable.

TEXTILE WORLD could also have a page called the "Now-they-have-done-it" page, and the results of the first page could be published on this page.

The styling and selling field, as well as the manufacturing, could contribute to such a department to the benefit of both, I believe. In fact, quite often it is the man who knows the least about a process that offers the best solution to a given problem. (*R-202*) *Warren A. Johns, Ontario, Canada.*

Formulas Given For Estimating Yarn Strength

A formula for estimating the strength of yarn from fiber properties is presented in an appendix to the preliminary report on "Comparative Significance of Alternative Cotton Fiber Length and Strength Measures in Relation to Yarn Strength," prepared by Robert W. Webb, principal cotton

inspiration for new fabrics

SARAN

Saran is your springboard into exciting new fabric ideas! Developed by Dow for the textile industry, this new basic material is inspiring new trends in color, design, and durable beauty . . . it is the promising basis for your handsome fabrics of tomorrow.

Saran brings to textiles the same dependable qualities that have distinguished it in the many other fields it has served. These plastic monofilaments weave beauty and long life into functional fabrics, adapting them particularly to assignments where constant service is demanded. Indeed, to sturdy Saran, age is simply incidental!

In wear-resistant upholstery, in luggage, handbags, draperies and countless accessories, Saran fabric is not only appealing but enduring. You can't scuff it. And all traces of dust, dirt, ink . . . even most chemicals . . . . can be whisked away with a damp cloth to restore its original beauty.

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Saran molding compounds, produced by Dow, are extruded as monofilaments or thread by skilled licensees located throughout the country. All of them are in a position to give you details about Saran and its possibilities. These licensees include:

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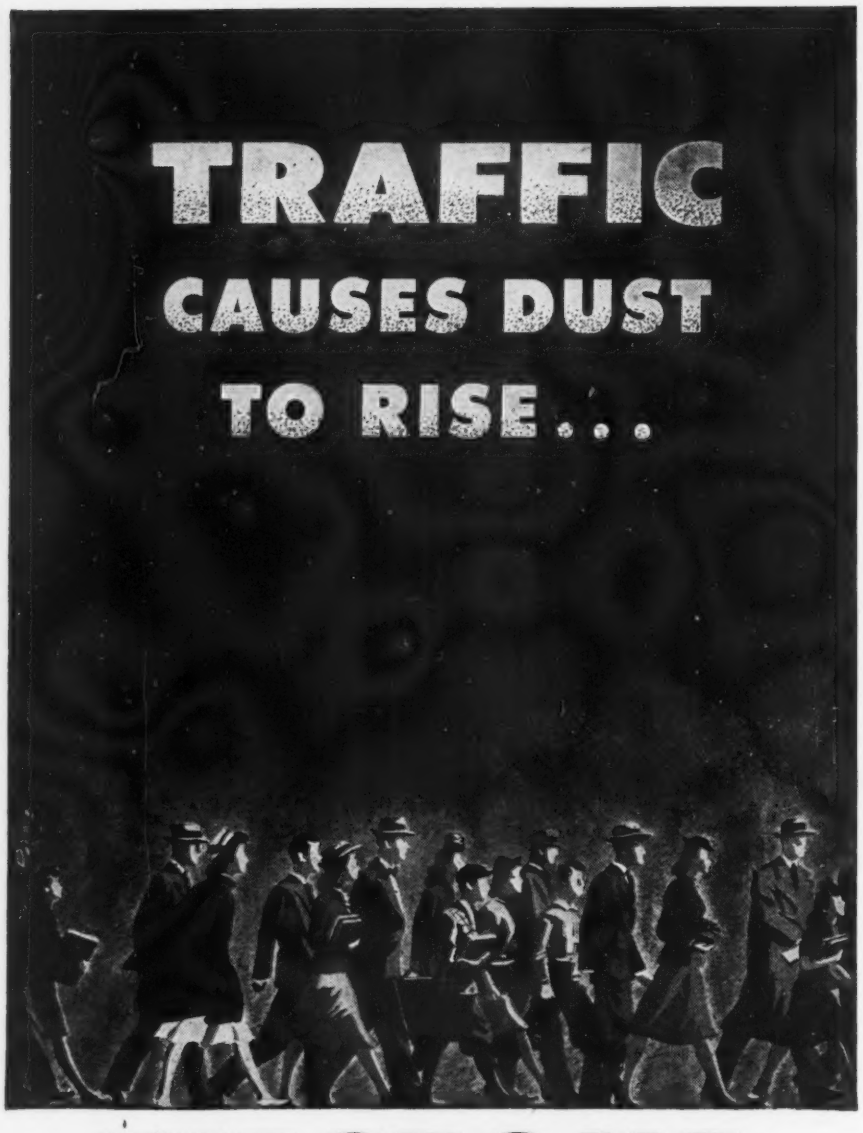
★ National Plastics Products Co., Odenton, Md.
★ Visking Corporation, Chicago, Illinois
★ Western Felt Works, Chicago, Illinois

DOW PLASTICS



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technologist, and Howard B. Richardson, cotton technologist, Cotton Branch, U. S. Dept. of Agriculture. This report covers the third phase of a study on the relation of cotton fibers to manufacturing performance and product quality.

The formula expressed as the sum of the following quantities with proper regards for plus and minus signs, is as follows:

$-1.875 \times$ grade of cotton by number (as, Middling is number 5)
$+77.903 \times$ upper half mean length
$+1.617 \times$ uniformity ratio, index
$-4.879 +$ fiber fineness
$-.176 \times$ percentage of mature fibers
$+12.334 \times$ fiber strength, Pressley index
$-139.25 =$ estimated strength of 22s yarn.

To convert the estimated strength of 22s yarn to the estimated strength of another yarn number spun from the same cotton, the following formula is used:

[22s (estimated strength) — 21.7 (desired yarn no. — 22s)] ÷ desired yarn no. = estimated strength of desired yarn no.

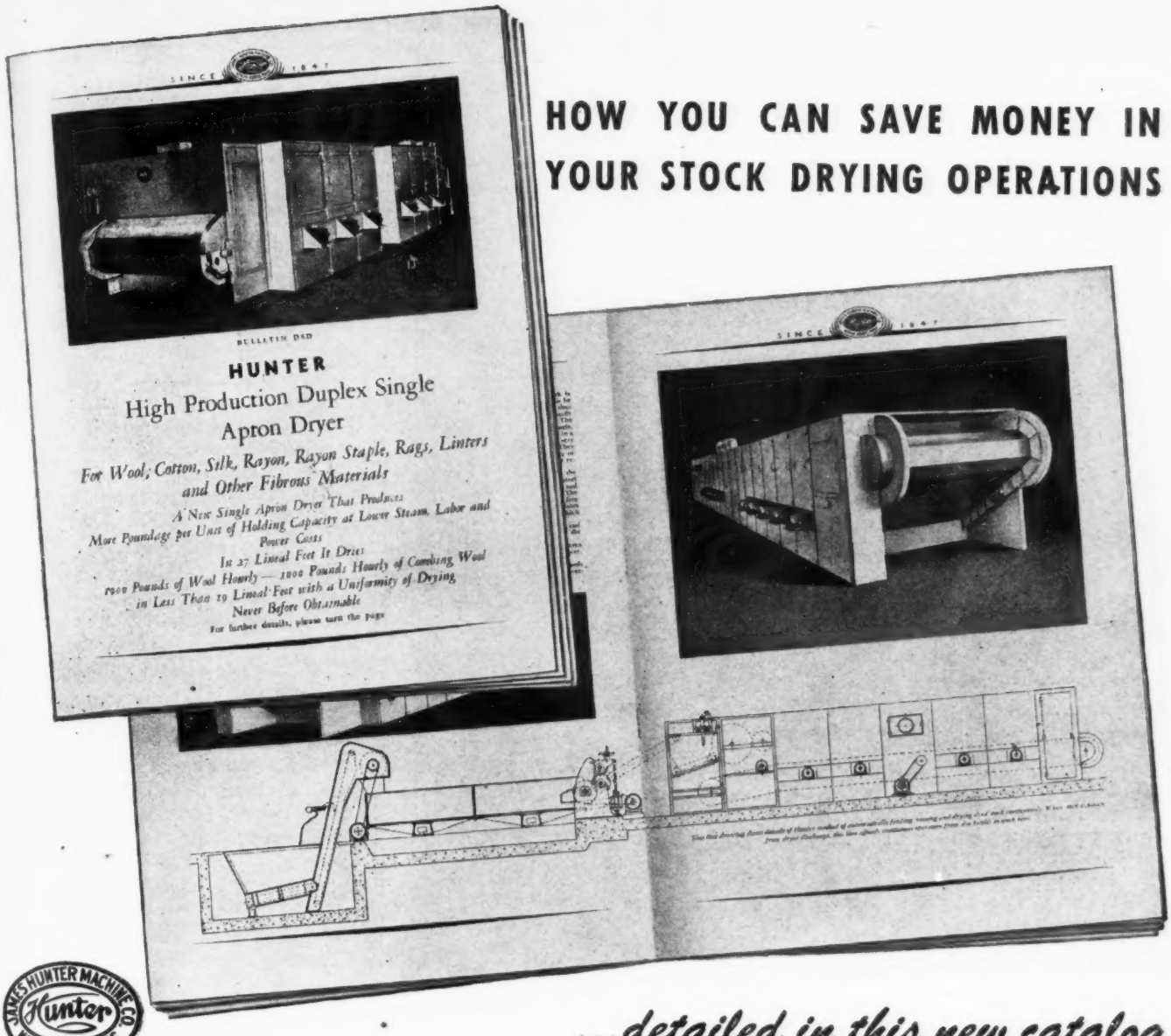
The authors of the report state, "Estimated values of yarn strength obtained for other [than the wide range tested by them] American upland cottons by substituting fiber-property values in any of the equations presented in this report generally should agree with their actual yarn-strength values, within the limits of tolerance specified, provided that a number of conditions are satisfactorily met."

The principal conditions pointed out are: (1) that cottons tested should have approximately the same range of fiber properties as those tested by the authors, and (2) that techniques and conditions of testing approximate those used by the authors. (*R-195*)

Letters to F. L. Nagle On His Retirement

Following are excerpts from a few of the many letters received by Captain Frank L. Nagle in response to the article in the October issue announcing his retirement.—Editor

A recent number of TEXTILE WORLD, [October, page 101] surely had a marvelous article on a friend known by the whole textile industry in this country who has reached the age of 85 years, well deserving a holiday to suit himself. Hearty con-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High Production Duplex Single Apron Dryer
For Wool, Cotton, Silk, Rayon, Rayon Staple, Rags, Linters and Other Fibrous Materials
A New Single Apron Dryer That Produces More Poundage per Unit of Holding Capacity at Lower Steam, Labor and Power Costs
In 27 Lineal Feet It Dries
1000 Pounds of Wool Hourly — 1000 Pounds Hourly of Combing Wool in Less Than 19 Lineal Feet with a Uniformity of Drying Never Before Obtainable
For further details, please turn the page
SINCE 1847

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...detailed in this new catalog

You are cordially invited to write for the new brochure illustrated on this page. It describes the new Hunter High Production Duplex Single Apron Dryer for wool, cotton, silk, rayon, rayon staple, rags, linters and other fibrous materials. The brochure will tell you how this new Dryer produces more poundage per unit of holding capacity at lower steam, labor and power costs. It describes how in 27 lineal feet it dries 1000 pounds of wool hourly—1000 pounds hourly of combing wool in less than 19 lineal feet with a uniformity of drying never before obtainable.

It describes in detail the newest aid to more uniform drying which is the Blow-up or Turnover Section incorporated into the Hunter Duplex Dryer.

It will tell you how you can continually rinse, extract and dry dyed stock so that the operation is continuous from the Dye Kettle to the stock bins.

Again we cordially invite you to write for this new free brochure.

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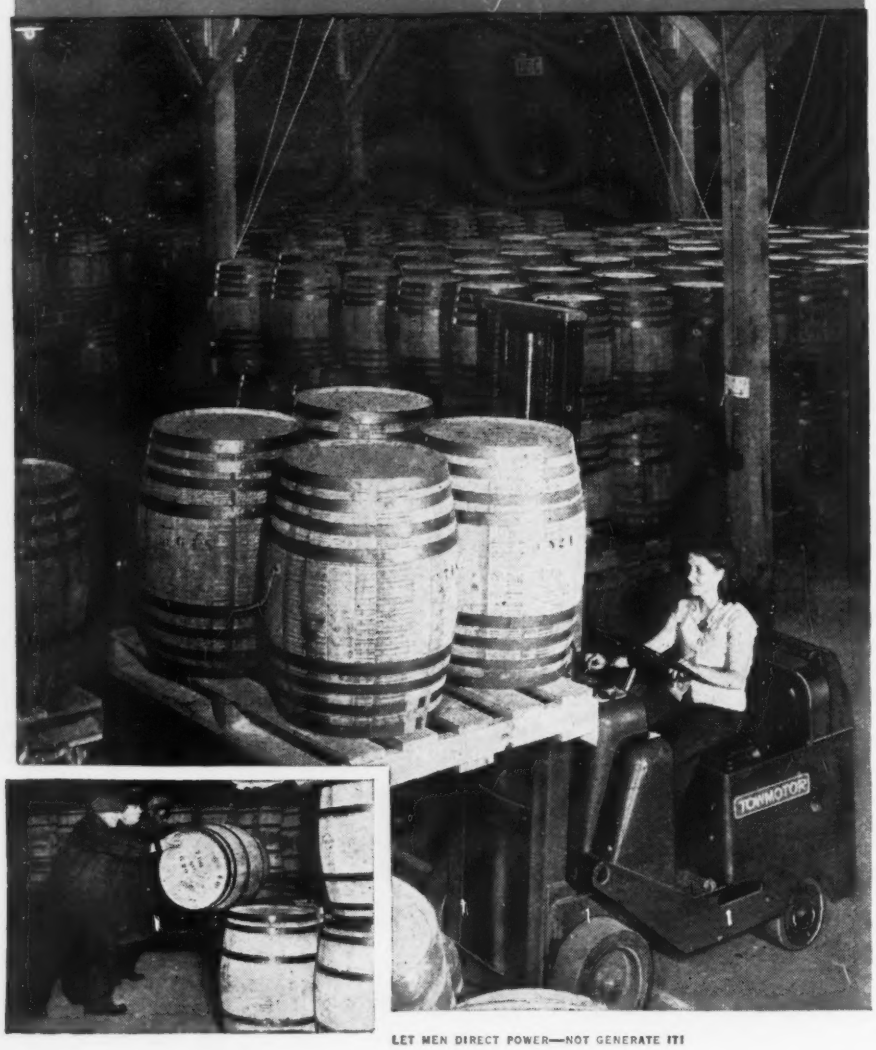

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ROUND TABLE

gratulations on the marvelous service you have rendered TEXTILE WORLD. Good wishes for the best of health. (*R-205*)

I am writing to tell you how much I enjoyed Ed Fowle's story about you in the October issue of TEXTILE WORLD. I can easily believe that this appreciation of your life will strike a responsive chord among the great host of your friends. (*R-206*)

Age is not a matter of years, and all of us in the textile trade thought that your virility would carry you on forever. Best wishes for many additional years with good health to enjoy them. (*R-207*)

Gosh all hemlocks, we fellows who started as office boys do have and have had lots of fun. You leave me nothing to wish for you, other than a continuance of sound health and contentment. (*R-208*)

You are leaving many, many friends in business who will miss you and your calls upon them. We have been one of your oldest accounts, and I want to send you in behalf of our organization our best wishes for a happy retirement. (*R-209*)

I enjoyed very much the fine article in the October issue, and I was impressed with the way the author had caught your spirit. . . You deserve a swell rest. (*R-210*)

The October issue carried a very nice article about your retirement after 65 years with TEXTILE WORLD—a wonderful record. We shall miss seeing you at the textile exhibitions but will think of the influence you have been in making them successful. (*R-211*)

I appreciate deeply your kindness and fine service given to us over many years of association. You have always been constructive and have made friends all along the way. (*R-212*)

I want to express my admiration for your service to the textile industry and my best wishes for your happiness in the future. (*R-213*)

To Frank Nagle's many friends, we wish to report that the latest dispatch from the Pennflora Hotel, St. Petersburg, Fla., indicates that he has begun his retirement well dug in for a happy and comfortable winter.—*Editor*

CHRISTMAS IN FULL COLOR

The first peacetime Christmas since 1940 will be colorful in more ways than one.

A complete range of colors is again available for all. Not only that, but new application techniques have been developed and perfected. So there will be a wider variety of fabrics dyed with fast bright colors.

This increased use of colors that last as long as the merchandise will benefit you—and the whole industry—by building greater consumer confidence in color. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

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WAXING AND POLISHING floors to a hard, lustrous finish with polishing brush on HILD Floor Machine.

BUFFING with lambs' wool or felt buffer on HILD Floor Machine. Removes streaks, goes under radiators, polishes waxed cove baseboards.

STEEL - WOOLING with pad and holder on HILD Floor Machine. Used for dry cleaning, polishing, scrubbing, wet buffing of penetrating seals, etc.

SANDING disc on HILD Floor Machine sands wood or cork tile. A 3-inch flat counter-sunk plate holds sandpaper firmly to rubber padded metal disc.

Plain-Handle Standard Floor Machine
Used to scrub, wax, polish, buff, sand, grind and steel-wool floors of all kinds.

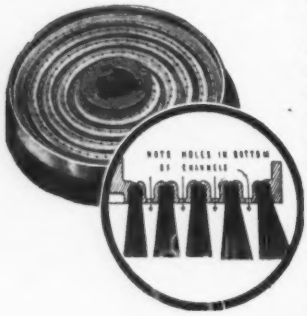
Portable Tank Type Shower-Feed Floor Machine
Scrub floors with the Shower-feed Brush shown below. Also waxes, polishes, buffs, sands, grinds and steel wools.

HILD Floor Machines are designed for use with easily interchangeable attachments to condition and maintain floors of all kinds . . . either in the mill or in office areas. They speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. Scrubbing with the Tank-Type Machine and Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts Soap costs . . . does not splash water on machinery or furniture . . . requires less time and labor to pick up dirt and water.

The HILD Machine operates so easily that either a man or woman can run it for long periods without tiring. It is practically noiseless in operation. The G. E. Capacitor type motors have no carbon brushes or commutator to gather dust and lint or wear out . . . made for long, trouble-free service.

HILD Patented Shower-feed Brush

This diagram illustrates the famous HILD Shower-feed principle. Scrub-soap solution is fed from the storage tank to the back of the brush . . . then passes through accurately spaced holes penetrating the brush back *between each row of bristles.* Solution is whipped up by the bristles into rich cleansing suds and evenly distributed under the brush area. Result: Speedy, thorough scrubbing action with minimum soap solution. The brush is refillable.



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Questions AND Answers

Lively Filling Can Be Prevented

Technical Editor:

We are sending under separate cover one quill of 300-den. combination yarn for your inspection. You will notice that although the yarn is properly steamed, it is still very lively. Can you suggest anything to stop the yarn from coming off so lively when unwinding in the shuttle? (9076)

The yarn on the quill submitted seeems to have been set very well. This could be a result of aging while in transit or of more favorable atmospheric conditions. The filling winding was done with a number 7 wheel, and it has been our experience that a number 5 wind is preferable. Also, the yarn seems to be wound with a high amount of tension, undoubtedly more than is normally needed. If you can keep your winding tension to an average of about 70 grams, you should find the filling less likely to jump off the end of the quill. There are indications that the tension used was sufficiently high to result in breaking the filaments of the yarn, as noted from the quill; but this might possibly have happened in some previous operation.

If you will look into these items, you probably can find the cause of the yarn jumping off the end of the quill:

1. See to it that the yarn is aged (conditioned) for at least two hours in the particular atmosphere in which it is to be woven.
2. Reduce the tension as indicated.
3. Try a number 5 wind.

The yarn itself seems to be set very well, as can be demonstrated by drawing some off the end of the quill and letting it fall into a loop. The loop does not twist up in the least. The diameter of the package does not seem to be excessive, and the taper of the nose is good. The diameter of the tube is rather small, but it is doubtful that the diameter is small enough to cause the trouble you are encountering.

Of course, we are assuming that

More than 90% of the Hosiery Made in America is Dyed in SMITH-DRUM Machines...

...and Here is the Reason

Dependable performance has earned for Smith-Drum Hosiery Dyeing Machines a position of outstanding leadership in sales over a long period of years. It is conservatively estimated that at least 9 out of every 10 pairs of hosiery made in this country and Canada are dyed in Smith-Drum Machines.

The rugged construction and careful workmanship which go into every Smith-Drum Machine are evidenced by the fact that many have been in daily operation for twenty-five years and longer, *with very low maintenance expense*. Even when it is necessary to send a Smith-Drum Machine to the factory for overhauling, it can usually be put in first-class condition at only nominal cost.

If you are interested in hosiery dyeing equipment that will reduce maintenance costs to rock bottom, get the complete facts on these Smith-Drum Machines. Descriptive booklet will be sent upon request. Write to . . .

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SMITH-DRUM Textile Machines

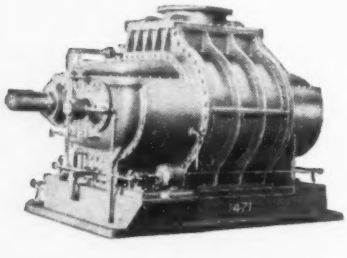
for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

PLENTY OF BOOST REQUIRED

• Gas doesn't just flow unaided to your kitchen range or factory burners. To maintain even pressure, it must be boosted along, and that's one of the big jobs for Roots-Connersville gas pumps.

It doesn't make any difference to these positive displacement boosters what the temperature or barometer reading is, or how many BTU's there are in a cubic foot, R-C equipment just pushes the gas, steadily and surely, to give you fuel where and when you want it, for your morning eggs or your manufacturing processes.

So simple is the design and so sturdy the construction of R-C units that many of them have been in profitable service for more years than most men can remember. Some applications are:



Every minute, this heavy-duty R-C unit pumps 15,000 cubic feet of manufactured gas. Equally sturdy and dependable R-C units are available down to 10 CFM capacity.

Proportioning and mixing gases
Acid-making processes
Foundry cupolas
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Paper folding machines
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Cooling cannery packs

The continued fine performance of R-C units is the result of our *dual-ability* to engineer and build to the most exacting specifications. If you have a problem of moving air, gas or liquids under moderate pressures, consult us.

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One of the Dresser Industries
512 Reed Ave., Connersville, Indiana

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ROTARY POSITIVE AND CENTRIFUGAL BLOWERS • EXHAUSTERS • BOOSTERS
LIQUID AND VACUUM PUMPS • METERS • INERT GAS GENERATORS

your shuttle is furred properly. Frankly, a properly furred shuttle should control the small amount of liveliness exhibited by the sample yarn, although we are not losing sight of the fact that the condition in your plant is undoubtedly worse than the sample you sent, since the sample had aged quite a few days.

Woolen-Card Production Upped by Tape Condensers

Technical Editor:

In a set of woolen cards; when changed over from ring doffers to tape condensers, if the carding areas, cylinder speeds, etc. remain substantially the same, why is the production greatly increased, sometimes doubled? (9077)

The crux of the problem is explained by the fact that when ring doffers are used there are only two banks of rub aprons; whereas, when tape condensers are used, there are usually four banks of rub aprons. In any set of rub aprons, it is necessary to keep adjacent ends far enough apart so that they will not roll together during the rubbing motion. This means that the strips of card clothing on ring doffers have to be fairly wide to allow a sufficient interval between any two adjacent ends going through one set of rub aprons. To produce any given count of yarn, this means that the individual roving web is comparatively thin and wide.

In distinction to this, on the tape condenser it is possible to split a heavier web into narrower ribbons and deliver more individual ends across the same card width. This increased number of ends is divided among four banks of rub aprons, thus insuring sufficient intervals in any one bank. This means that the narrower individual web produced by the tape condenser must be thicker than the ring doffer web in order to deliver the same count of roving. Obviously, since by use of the tape condenser more individual ends of the same weight are delivered, the production is increased.

Different-Grade Cottons Blended in Opener Room

Technical Editor:

Is it best to blend a low-grade and a high-grade cotton at the openers or farther along the processes, as at the drawing frames? Which method is most efficient? (9078)

The blending feeders in the opening room is the proper place to do any blending of cotton, regardless of the difference in grade or staple.

(Continued on page 175)

How would **YOU** *print this pattern?*

Pacific Mills selected a rather unusual, but simple, procedure for producing this design on a cotton fabric for utility shirts. First, the pattern was printed with Aridye* Pigment colors, using the following formulas:

Brown . . . 3 parts Aridye Brown FWR, 1 part Aridye Yellow FYK, 1 part Aridye Black FK; cut 1:16 with Aridye Clear.

Orange . . . 2 parts Aridye Orange FO, 1 part Aridye Scarlet FSG; cut 1:6.

After printing, fabric was dried on cans. Next, the ground was dyed, using 13 parts Aridye Yellow FYK and 1 part Aridye Black FK; cut 1:60 with Aridye Clear. Dyeing, pre-drying, drying and curing were carried out in one continuous operation on a pigment dyeing range consisting of a padder; pre-dryer; housed, heated tenter frame; and curing oven.

Result: a sharp, clear pattern which closely simulates a woven design. Fastness to light, laundering and perspiration met every requirement.

This particular pattern is typical of the unusual effects which can be achieved with Aridye Pigment Colors, but which would be difficult to obtain by conventional methods. Aridye Pigment Colors are proving advantageous, too, for many every-day printing jobs.

Why not have an Aridye technical service man discuss your printing or dyeing problems with you? Write to Aridye Corporation—Pioneers in Pigment Colors for Textiles—Fair Lawn, New Jersey.

*Reg. U. S. Pat. Off.

CHECK THESE 8 ADVANTAGES

Sharpness of Mark · Exceptional Fastness to Sunlight · Uniformity of Shade · Fastness to Washing · Bright Colors · Economy · Ease of Application · No Impairment of Hand

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Pigment colors

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SEASON'S

GREETINGS

and best wishes for
the New Year

Boger & Crawford

(Continued from page 172)

However, it is not considered good practice to blend widely different cottons. The grade difference is generally limited to one grade. A Middling cotton can be mixed with a Strict Low Middling cotton with good results, but when a Middling is mixed with Low Middling, or lower grade, the good qualities of the Middling are smothered in the poorer qualities of the lower grades.

The uniformity of all mixes can best be controlled by doing the blending directly from the bale in the opening room. Varying percentages of the different grades may be desired in the mixes, and these proportions can be easily obtained and maintained by varying the number of bales of each kind laid down on the opener floor.

The cotton classer's records will show the length, color, leaf, preparation, and character of every bale received. These records will permit the selection of the correct number of bales of each type of cotton to maintain the uniformity of all present and future mixes. It is a simple matter to change the proportion of each type if the results in the finished yarn are not satisfactory as to strength and appearance.

One advantage cited for the method of mixing on the drawing frames is that it allows the lower-grade cotton to be given additional cleaning not required by the higher grades. This additional cleaning can also be given to the blended higher grades without injury to the staple and without significantly increased cost. Mixing on the drawing requires keeping each type of cotton separate from the bale to the breaker drawing with different identifying lap and can markings. Constant supervision and persistent checking are required to assure that the correct number of cans of each type of cotton are fed to the back of the breaker drawing at all times. Any variation in this proportion is likely to be evident in the appearance of the finished yarn. This is important where cloth is delivered in the gray and darker warp stripes and filling bars are objectionable.

It may be pointed out that the method of mixing on the drawing frame has been used successfully in blending synthetics with cotton. This has been only a matter of convenience in most mills running small quantities of synthetic-cotton blends. It has been found that a more uniform blend is obtained by the sandwich mix fed into the hoppers of the pickers and thus utilizing the valuable mixing and

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HE'S OF THE OLD SCHOOL--BUT HE'LL CHANGE HIS TUNE WHEN SPEEDI-DRI SAVES HIM FROM GETTIN' HIS EARS CHAWED OFF IN THAT MACHINE!
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For firm, safe footing . . . for floors that are home-clean, free from dangerous, ice-slick oil- and grease-deposits . . . the answer is SPEEDI-DRI!

SPEEDI-DRI . . . the oil-thirsty, granular absorbent . . . puts down a magic carpet that's safe for working . . . safe for walking. No expensive machinery . . . no trained personnel . . . is required to apply SPEEDI-DRI.

Just spread it around over offending surfaces . . . and you've got safety underfoot. Sweep it up, and your floors are bone-clean. SPEEDI-DRI will remove even ancient oil- and grease-deposits.

SPEEDI-DRI *saves* in more ways than one. It releases cleaning-personnel for more productive work. It pushes production up by eliminating fatigue and preventing falls. SPEEDI-DRI will not readily burn even when oil-soaked and is widely recommended by leading insurance companies. In addition, it is not necessary to interrupt production-schedules to apply SPEEDI-DRI. It works . . . while *you* work in safety!

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OIL AND GREASE ABSORBENT

blending properties of the pickers and the cards.

Knit Goods Damaged By Chlorine Bleach

Technical Editor:

Practically all the bleacheries in Chili use the kier system for bleaching knit goods; and since peroxide is very expensive, we bleach with chlorine. The results we obtain in our plant are not satisfactory because of the damage to the goods. Can you give me any pointers which might help us? (9079)

As pointed out in the April, 1942 issue of TEXTILE WORLD, approximately 43% of the knitting mills in the United States which do their own bleaching use chlorine, 36% use a combination of chlorine and peroxide, and only 20% use peroxide alone. It is safe to say that the majority of these mills obtain satisfactory results, since they were able during the war to produce goods which met the rigid standards of the Army and Navy.

There are a few fundamentals which you would do well to investigate to see if you are processing your goods in a manner comparable with that used by some of the successful mills in the United States.

The first requisite for a good bleach is the caustic boil-off. Since the purpose of this boil-off is to remove as much as possible of the natural oils and waxes of the cotton, the formula used and the boiling time should be adjusted to accomplish their purposes without damaging the goods. Too little boiling or too weak a formula will leave so much of the oils and waxes in the cotton that the chlorine solution will be taxed to complete the bleaching, and an uneven bleach may occur. On the other hand, too strong a solution or too much boiling will weaken the knit fabrics.

The correct formula will depend upon the purity of the water and of the chemicals. The presence of 0.1 to 0.3% of chlorides or sulphates in the caustic will allow as much as 10% of the impurities to remain in the cotton (TEXTILE WORLD, August, 1943, page 92). Generally, the caustic formula will be about as follows:

Caustic soda	60%
Sodium silicate	18%
Inorganic phosphates	4%
Penetrating agent	18%

The purpose of the sodium silicate is to minimize the possibility of rust spots from the kier walls. The inorganic phosphates act as a softener to counteract the minerals in the water.

Several penetrants are sold under

Something you mustn't overlook

Much of the subtle perfection of this alluring beach ensemble is hidden from the casual observer. But if you could see and handle the material from which it is made, you would realize that proper processing has a lot to do with its eye appeal . . . and its "*buy*" appeal!

That's why so many leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

There is a C.P.P. soap or synthetic detergent for every type of fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of C.P.P. processing agents for the textile industry. Or, write to our Industrial Department at Jersey City 2, New Jersey.

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trade names or as specialties. The extent of their value will depend upon the conditions peculiar to a particular mill, and their use should be standardized only after experimentation with and without a particular agent.

Boiling time should also be determined by each mill. For most knit goods, about 10 hr. should suffice.

After the caustic boil, the goods must be thoroughly washed. Ordinarily, most cotton knit goods can be washed through hot water in the kier. If the mill finds that this does not remove all traces of the caustic, a washing with soap and possibly a boil may be necessary.

Following the proper preparation of the goods for bleaching, the formula of the chlorine liquor should be made as weak as possible to obtain a satisfactory bleach. If your trouble has been originating in the caustic boil-off or the wash, it is quite possible that you will be able to subject the goods to a less harsh process at the chlorine stage; and thereby decrease the likelihood of damaging the fabrics.

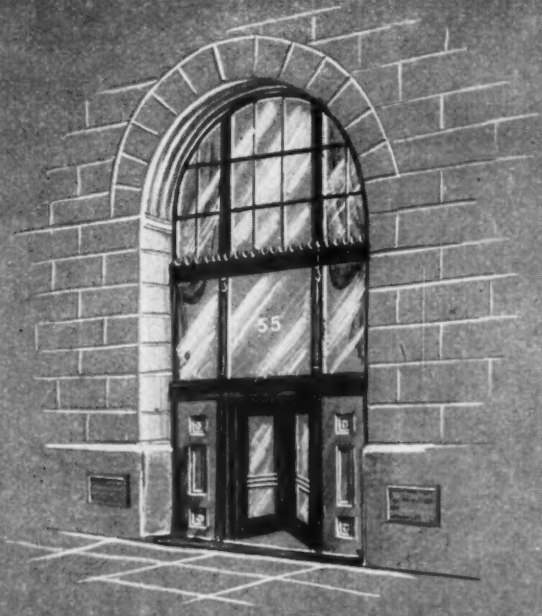
Covers For Cylinders Aid Slashing Filament

Technical Editor:

In the article "Soy-Bean Size Is Easy To Apply and Remove," appearing on page 127 of the October issue of TEXTILE WORLD, cylinders 2, 3, 4, and 5 are marked "covered" in Table II. We have never heard of covering these cylinders when using any other kind of size. Why is it recommended for soy-bean size? (9075)

Covering of slasher cylinders simply refers to winding a wide piece of sheeting or netting around the cylinder to keep the yarn from coming in direct contact with the metallic surface. Actual practice has shown that with certain sizing there is less serious sticking to the cylinders if they are covered, although some people dispute this fact. Factors which influence whether or not the cylinders are covered are: yarn being sized, ingredients used, temperature employed, and speeds at which the slashers are run. Covers are not used on cotton slashers when slashing cotton yarn and rarely on the two-cylinder cotton slashers when slashing rayon. Of course, such slashers are not considered best for synthetic yarns, particularly filament acetate.

The recent trend from the use of sheeting in covering cylinders to the use of netting is probably due to the fact that when using netting the yarn



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for WEATHERING and FADING with
ATLAS-OMETERS

Twin-Arc
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The new Atlas Twin-Arc Weather-Ometer has been developed to save time where speed in testing is essential.
Where Federal Specifications call for a definite number of testing hours in the Atlas single arc Weather-Ometer, this time can be cut in half in the Atlas Twin-Arc.

Exclusive Atlas Twin-Arc Weather-Ometer features:

1. Temperature control.
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3. Adjustable and automatic timing.
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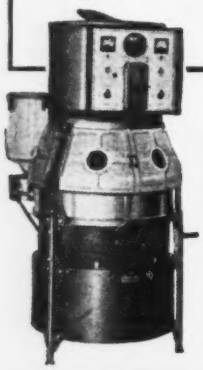
5. Operates continuously 24 hours without manual attention.
6. Carbon cost 28c per day.
7. Full automatic—Safe to operate unattended overnight.
8. Control panel contains Volt and Ammeters—Time Meter—Light and Water Cycle switch — Automatic time cut off switch — Voltage adjusting switch — Direct reading thermal regulator —Reactance Coil (cut power cost in half).

The Single Arc Model is a popular machine where high speed is not required.



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The recognized standard machine of the textile trade for determining the light-fastness of materials. Specimens are rotated around the Atlas Enclosed Violet Carbon Arc — the closest approach to natural sunlight. Temperature of the filtered air is automatically controlled. Proper humidity is furnished by evaporation from a constant-level water reservoir. Available with a wide variety of specimen holders and exposure masks.

• Originators and sole manufacturers of accelerated testing devices for a quarter of a century. Fade-Ometer, Weather-Ometer, Launder-Ometer are used all over the world as accepted standard testing machines.

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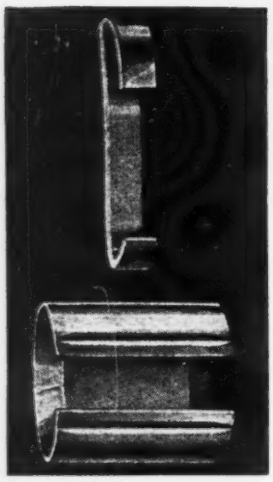

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IN COTTON SPINNING — WITH THE
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On cotton spinning the "Bevel-edge" greatly reduces the trouble.

The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silk — no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

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comes in contact with a smaller amount of drying surface and consequently pulls off better if there is any tendency to stick. As can easily be imagined, the covers eventually are coated with size, at which time they can be taken off, washed, and reused. It is interesting to note that some slasher men prefer to cover the first cylinder, whereas others prefer to have it uncovered. This is principally due to conditions in individual mills.

The following table shows a few slashing conditions and recommended cylinder coverings for each:

Cloth	Warp Yarn	Formula	Cylinders Covered
Sharkskin	Viscose	Light gelatin	None
Twill	Acetate	Heavy gelatin	3, 4, 5,
Flat-crepe	Acetate	Heavy gelatin	3, 4, 5,
Fugi-type	Rayon	Light gelatin	None
Nylon twill	Nylon	Special	1, 2
Canton crepe	Acetate	Medium gelatin	3, 4, 5,
Crepe-back satin	Acetate	Heavy gelatin	3, 4, 5,
Satin	Acetate	Heavy gelatin	3, 4, 5,
French crepe	Acetate	Heavy gelatin	1 3, 4, 5
Waffle cloth	Viscose	Light gelatin	None

Table Specifies Lighting Intensities

Technical Editor:

Can you give me the recommended foot-candles for properly lighting a knitting plant? (9081)

The specifications tabulated on page 109 of the April, 1945, issue of TEXTILE WORLD for full-fashioned and circular knitting plants will prove suitable for any type of knitting mill. The table is reproduced here.

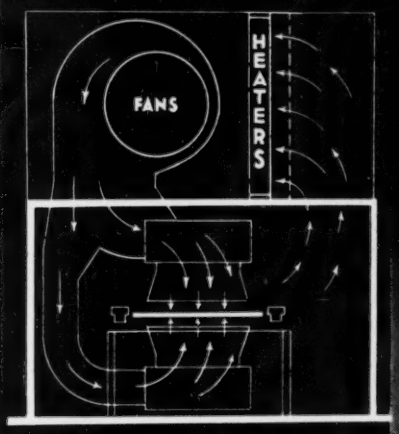
Suggested Lighting Intensities for Hosiery Mills

Department	*Foot-Candles*
Knitting:	
F.F. or cir. knit	50
Gray goods processing:	
Looping	75
Seaming	75
Inspection	100
Finishing:	
Pairing	75
Mending	75
Inspecting	100
Folding	35
Boxing	35
Boarding	35
Dye House:	
General	30
Laboratory	100

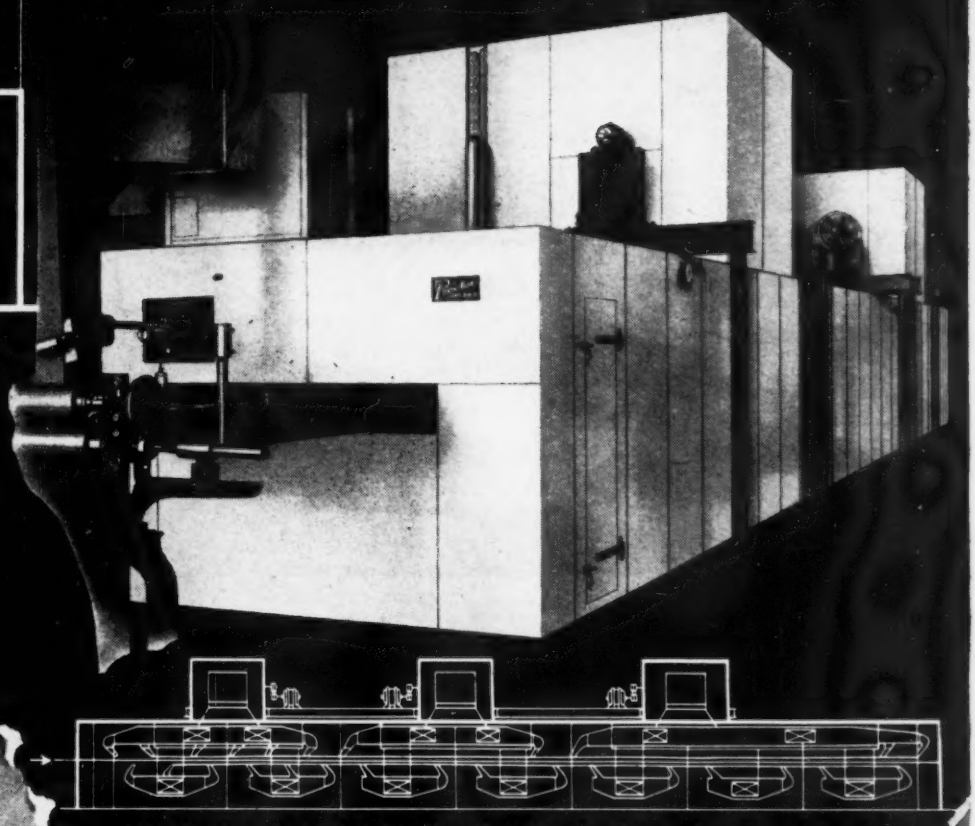
Reduced Drying Time in

PROCTOR SINGLE RUN TENTER

INCREASES OUTPUT
IMPROVES FABRIC QUALITY



Cross section illustrates location of heaters, fans and method of air circulation.



Side elevation shows cloth line through drying chambers and position of nozzles for impinging heated air onto both sides of cloth.

Everything about the Proctor Super Speed Drying System, applied to single run tentering machines is aimed toward increasing output and improving fabric quality. High output is achieved, varying in relation to individual plant requirements, length of the machine and weight of goods. Speedy operation is made possible largely through the unique system of air circulation. Air, at high temperatures, is impinged through nozzles against both sides of the fabric, as it is carried through the dryer. Circulating through the goods, this penetration of uniformly heated air reduces drying time.

Keeping the time to a minimum that fabrics are exposed to drying temperatures actually improves ultimate quality. Regulation of moisture in the air, so as to obtain speedy drying without harsh effects upon the cloth, has an important bearing upon the quality of the finished goods. Temperatures, air circulation and drying speed may be altered for drying a wide variety of fabrics and finishes. This machine is in use in the drying of many fabrics preparatory to curing. Write for details.

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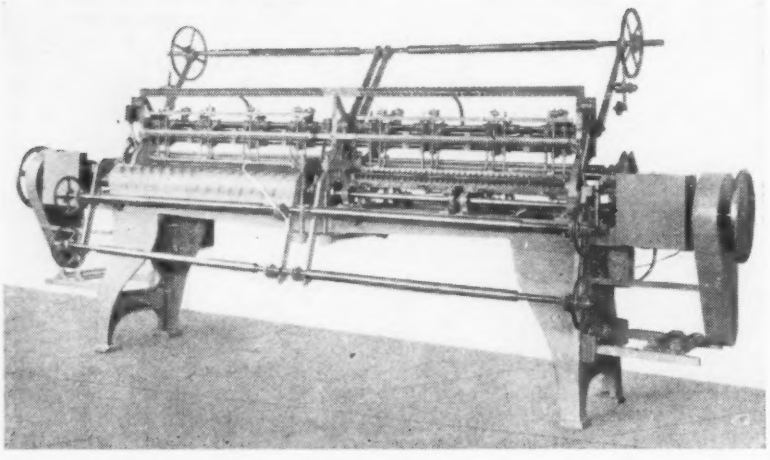

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FACTORING FOUNDED ON SERVICE

Distorted Loops

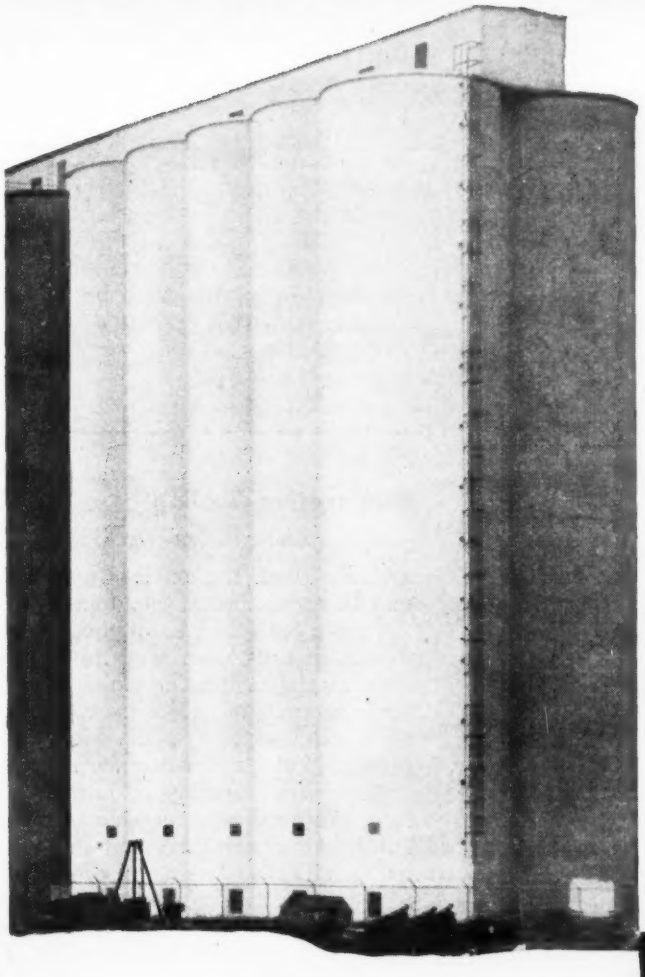
(*Continued from page 125*)

bane of reciprocating knitting, one machine manufacturer has designed and patented an auxiliary sinker cam to straighten out each loop while the course is being laid. This is affected by a rocking cam pivoted in the sinker cap. This auxiliary cam, known as the "flopper" cam, advances the sinker inward enough to true up the loop through a slight tension after the stitch has been drawn. Details are shown in Fig. 3. The slight tension put, in turn, on each loop is exerted by the throat of the sinkers, and is just sufficient to true the loops. Too much tension on the drawn loops, as would be the case if the flopper cam was set to project the sinkers too far inward, would strain or break the loops and cause a run when the hosiery was boarded. Consequently, the fixer, when setting this cam should be careful not to over-do it. The straightening effect of this mechanism is on much the same principal as the yanking machine used to stretch out the ribbed tops of socks knitted on the full automatic machine.

A patented device developed by the Hemphill Co. and used on its split-foot machine in connection with the flopper-cam arrangement, comprises inner sinker cams for raising the projecting sinkers as stitches are formed. This device consists of a stationary sleeve around which the needle cylinder revolves. This sleeve is supported by a ring securely fastened to the underside of the bedplate. Means for adjusting by raising or lowering the sleeve is provided by suitable stop-screws and lock-nuts on this supporting ring. At the upper edge of this sleeve are bolted the cams for tilting the sinkers upward. There may be two of these inner sinker cams—one for each direction of oscillation. It has been found satisfactory to use only one inner sinker cam, the flopper cam controlling the sinkers in one direction of the cylinder swing and the sleeve cam controlling them in the opposite direction. When two inner cams are used on the sleeve, they are spaced on either side of the auxiliary yarn feed, and equidistant. A sketch of the sleeve and cams, and their relation to the sinkers is shown in Fig. 4.

The sinkers are actuated by the sleeve cams lifting the end of the cast-off prong. The outer end carrying the sinker butt acts as the fulcrum against the sinker head. This tilted sinker will cast off its loop before it is tilted again by the second cam while the needle is being raised to take yarn for another loop. The second movement by the other cam has no

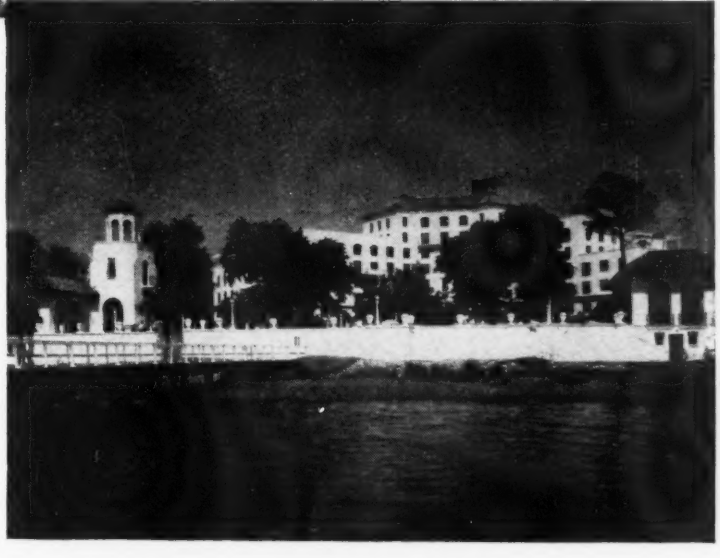
PUT THIS RAINCOAT ON YOUR BUILDINGS



Exterior Masonry needs this protection from northwestern flour mills to southern resort hotels

To extend the life of your buildings you must impede the penetration of water into your concrete, brick or stucco walls, preventing reinforcing bar rust, spalling or disintegration. All this is accomplished by Waterfoil which is unlike any other protective coating. Waterfoil is manufactured of irreversible inorganic gels which bond chemically and physically to form a dense, hard protective outer layer on structural masonry surfaces. Waterfoil beautifies and protects at the same time.

Shabby building exteriors treated with Waterfoil undergo an amazing change in appearance and condition. Waterfoil improves the appearance of a structure and lengthens its life. It is easily applied. We took ten years to develop and test it. Send today for the Waterfoil literature. It's most important to owners and operators of all factories, warehouses, hotels, apartments and business buildings.



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effect, since the newly formed loop is held idly on the shank of the needle. However, as previously stated, only one sinker elevating cam is usually employed on the sleeve; and it acts only on alternate courses or oscillations of the cylinder. The intervening courses of the gores or split-foot are knitted with the flopper-cam control of the sinkers. The effect of the alternating action of these two sinker-manipulating devices practically eliminates washboard effects during reciprocating knitting, and the fabric in the heel and toe and the split-foot portion of the stocking will compare favorably with the boot part.

Evaporative Cooling

(*Continued from page* 117)

in order that the relative humidity may be maintained at the proper level.

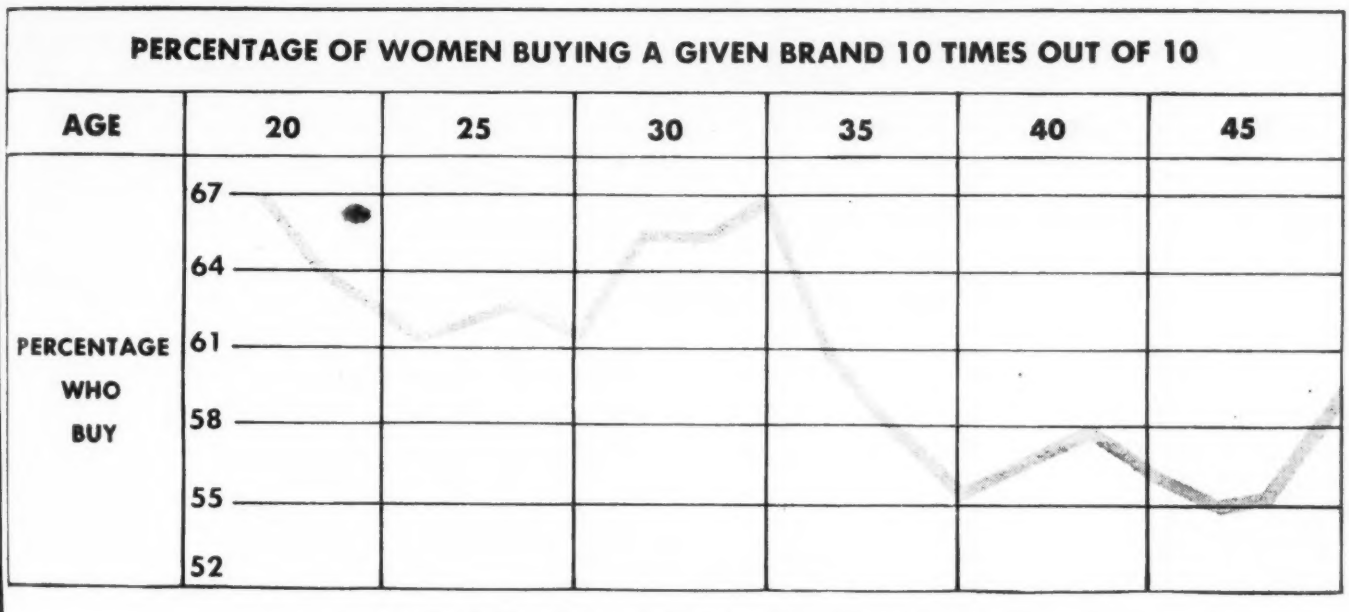
Proper control of atmospheric conditions in the various departments is obtained by ventilating units in the upper sections of approximately every third window, and so designed that the air of the room may be recirculated or fresh air may be introduced from the outside as required. When outside air is being brought into the room, the exhaust vents, placed at intervals between the ventilating units, are automatically opened. This facilitates free movement of air.

The left side of the weave room has individually driven looms, a 1 hp. motor to each loom. In the right side the looms are driven by belts from line shafts. This accounts for the difference in the number of atomizers used, more being required for the side with individual drive because of the heat given off by the motors. Vents and controls are the same at both ends so that if changes are made later in the method of driving the looms, the system will still be adequate.

A cooling and ventilating master control system (C&V control), comprising numerous well-separated stations, is shown, and this automatically opens the outside louvers and closes the re-circulating dampers when the temperature rises above a predetermined level. But, it will not permit more air to be brought in than the atomizers can properly condition. This permits the relative humidity to be kept within certain limits and prevents cooling at the expense of relative humidity.

Regulation of relative humidity is through a direct acting humidity control which operates a diaphragm valve in the air line. These valves are placed at strategic points throughout the rooms, and, by controlling the com-

What deodorants tell about Women



IN THE YEARS BETWEEN 20 AND 30 WOMEN ARE MOST SUSCEPTIBLE TO BRAND NAMES

INTERVIEWS with thousands of women between 16 and 50 in a Fawcett survey proved that 64% of the 20-year-olds consistently buy the same brand of deodorants. In the ten years between 20 and 30, women's loyalty to deodorants *by specified brands* lasted – it never dropped below 62%: more than three out of five of those women said they bought the same brand ten times out of ten.

Of the 25-year-olds questioned, 57% bought the same brand of shampoo, ten times out of ten, but their brand loyalty, in contrast to the deodorant story, dropped off sharply.

This Fawcett survey studied women's purchases of "convenience items" – gelatines, toilet soaps, soap flakes, face powders, sanitary napkins, deodorants, canned soups, lipsticks, cold or all-purpose face creams.

The results matter greatly to you. In their early twenties, brand names make their first impression on women. Women form their brand loyalties then. These loyalties persist, as you see from the chart. Women from 20 to 30 are most susceptible to brand names.

Establish *your brands* in their minds in these first-impressionable years. Introduce them to your products then, so that as they grow older they will keep wanting and buying the product of yours they've learned to like. Never forget that:

WOMEN OF 20 TO 30 have more buying years ahead;

WOMEN OF 20 TO 30 are experimenting with new brands, and picking *their* favorites;

WOMEN OF 20 TO 30 have used certain brands in their family homes, and are more likely to carry this more recent home influence over into their own adult buying;

WOMEN OF 20 TO 30 have already been using certain brands for years – a large percentage (as the interviews showed) for ten solid years and more. Brand loyalty *can* be built and maintained surprisingly early.

You can reach more women of 20 to 30 with *your advertising dollar* in the Fawcett Women's Group than in any other major magazine in existence. More than 3,000,000 women – married, homemakers, mothers – go to their newsstands every month and pick out these magazines that help them live.

Reach women of 20 to 30 in the

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FAWCETT PUBLICATIONS, INC., 295 Madison Avenue, New York 17, N. Y., World's Largest Publishers of Monthly Magazines

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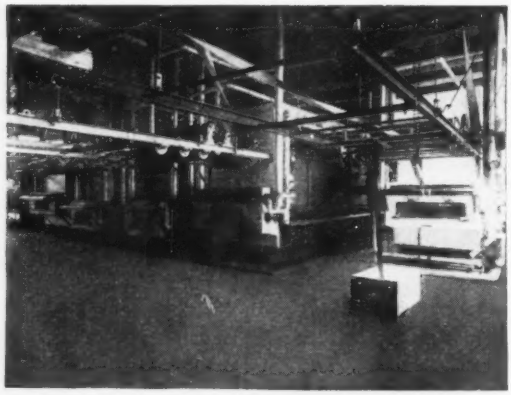

We Are Proud of This Installation

The New England Butt Ager and its strikingly modern features are outstanding in the units illustrated above. Of the machines shown three were furnished by us new, two were overhauled with our new ball bearing roll housings and drives, and one was equipped with our entering chamber.

Space does not permit a detailed description. Why not write us for complete data? We feel sure that the details concerning the New England Butt Ager will interest you.

NEW ENGLAND BUTT COMPANY

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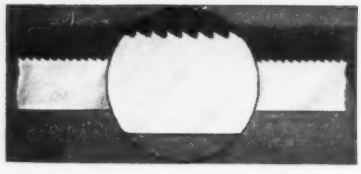
To Clean and Reseat Slots *in Sinker and Divider Heads*



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No need to send sinker and divider heads back to factory when you have Thomas & Skinner Slot Cutters. This simple and valuable tool enables you to clean out and reseat slots right *in your own mill.* And you can keep a machine in operation—with only the head you are working on out of production for a few hours.

Thomas & Skinner Slot Cutters are made from high grade tool steel, tempered and ground to exact gauge of the sinker. Comes in a leather carrying case. Every fixer should carry one. It is necessary to send sample sinker when ordering slot cutter.

Other Products

Other quality products which we manufacture for full-fashioned hosiery mills include Jacks, Jack Axles, Course Markers, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines.

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pressed-air flow, they govern the operation of the atomizers.

The circulating fans are designed to deliver 426,000 cu. ft. of air per min. through the units now installed in the entire plant.

John B. Humbert, local manager, in discussing the installation said, "I feel that working conditions will be greatly improved and this will be appreciated by the help. Further, I believe the general morale of the workers will be stimulated and their efficiency improved."

Napping

(*Continued from page 129*)

some improvements in the process and machinery. The establishment of some sort of standards and means of measurement would give the napper man something to aim at and the mill executive a convenient check on the performance of his nappers.

NAPPING OPERATION DESCRIBED. There are several types of nappers in use today, but most of them are quite similar. The work is done on all of these by a series of small wire-covered rollers, arranged around the outside of a revolving cylindrical shell. The wire covering of the rollers is usually based on fabric and rubber, with the wires driven like staples through the rubberized fabric. The rubber in the fabric gives the wires a springiness, so that they stand upright unless bent or damaged. The points of the wires are bent to form a "knee" or angle at various distances from the base fabrics. This means that the points of the wires on any roll will all "lay" in one direction around the roll, something like the teeth on a ratchet wheel. The roll turns freely against the cloth in one direction, but the wire points dig in solidly if pulled hard in the other direction. If the roll is turned at nearly the same speed as a piece of cloth held against it, the points of the wires will penetrate the cloth and then pull out with a snap, because of the angle of the bend on the wires. As it snaps out of the cloth, it pulls a few fibers loose to begin to form the nap or pile on the face of the cloth. The relative speed of the cloth and the roll, as well as the tension on the cloth and the sharpness of the wire, regulate the depth of penetration and amount of napping action. (See Fig. 1.)

As stated before, the machine consists of a series of wire-covered rolls, mounted on ball bearings around the outside of a cylindrical shell which revolves around a large central shaft. The cloth passes almost entirely around the large cylinder and moves in the same direction that the cylin-

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WE'RE STREAMLINED . . . modernized . . . and new technniqued as we never have been before.

With the result that once we are able, we will "deliver the goods" at a capacity that's on par with the record-breaking production rate we established during the war.

Which means that in the near future you will be able to get all those amazing new Cheney fabric developments we've been talking about.

And this is about the best news we've been able to give you in many, many months. The next good news, we hope, will be the actual merchandise itself.

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R.D. COLE MFG. CO. ESTABLISHED 1854
Newnan Ga.

der revolves, but at a much slower speed. The rollers which form the face of the cylinder also revolve, but at a surface speed close to that of the cloth. These rollers are driven by belts operating against pulleys on the end of each roll. The speed of these belts can be varied by means of cone pulleys at the end of the machine, so that the surface speed of the rolls can be changed at will. The speed of the cloth can also be varied by means of step pulleys at the end of the machine. Most nappers also have a mechanical means of changing the tension of the cloth by changing the speed of the rolls feeding the cloth into the machine, while the output roll remains constant.

TWO MAIN KINDS. There are two main types of nappers: single-action and double-action. On a single-action machine, the points of the wires all "lay" one way and all of the rolls are "worker" rolls. On a double-action napper, each alternate roll is a worker and the others are "carriers." The wires on the worker rolls are pointed against the motion of the cloth around the cylinder, and the carriers are just the opposite. Each set has its own separate cone pulleys for changing the speed. On some machines, there is a slight difference in size between the workers and carriers. The names "worker" and "carrier" rolls are used by some napper men while others prefer to call them "pile" and "counter-pile" rolls. The names are not exactly synonymous, but are nearly so. In general, there are these variables in the machine itself, aside from the wire covering on the rolls:

1. Speed of the cloth, which can be changed by step-pulleys.
2. Speed of the worker rolls, which can be varied by shifting the belt on the cone pulleys, also by changing the size of a driven pulley at the end of the shaft which turns the cone pulley. The cone pulleys give variations between the steps of standard-size pulleys.
3. Speed of the carrier rolls, which is changed just like the worker rolls except by a second set of pulleys.
4. Tension or "draft" of the cloth drive, which is changed in various ways on different machines.

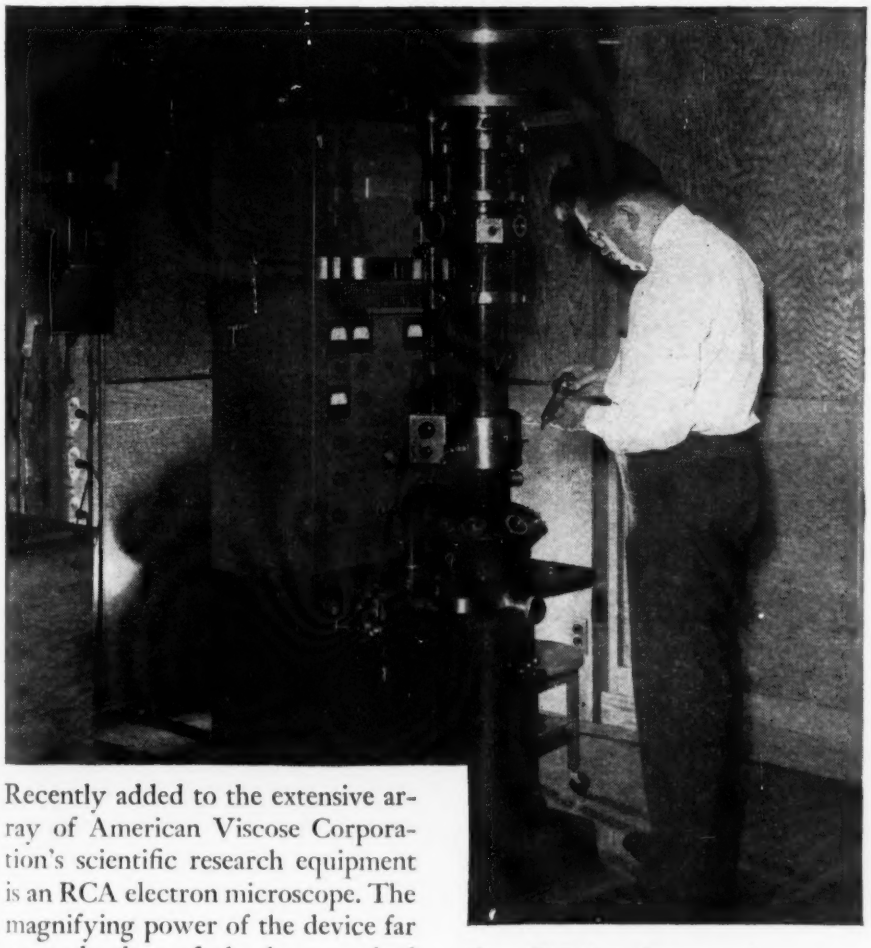
(A single action napper has only one set of rolls, so item 3 would be omitted in that case.)

In order to keep the wire covering on the rolls free from lint and threads, the machine has a "stripper" or "clearer" roll underneath the main cylinder to contact each set of rolls, as it passes the bottom point. On a single-action napper, one stripper is

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. DECEMBER, 1945

ELECTRON MICROSCOPE USED IN NEW RAYON RESEARCH STUDIES



Recently added to the extensive array of American Viscose Corporation's scientific research equipment is an RCA electron microscope. The magnifying power of the device far exceeds that of the best optical microscope, with magnifications up to 50,000 diameters easily obtainable.

Installed in the Corporation's Chemical Research Laboratory, Marcus Hook, Pa., the microscope is an electronic device that permits scientists to see objects far smaller than anything heretofore made visible to the human eye. It is used both in long range academic research and in immediate projects dealing with the structure and chemistry of rayons, with the objective of improving rayon and extending its applications.

New Fabrics Approved as CROWN Tested

Among the new rayon fabrics recently approved under the CROWN* Tested Plan are the following:

Cohn-Hall-Marx's "Pancoast," an all spun viscose rayon fabric, finished by Waldrich Co., Allied Textile Printers, and Housatonic Dyeing and Printing Co., Inc., approved for hand washability, for dresses and blouses.

Verney Fabric's trio of fuji, broadcloth and thick-and-thin types of all spun viscose rayon fabric, finished by Kenyon Finishing Co.; approved for washability, for men's dress and sport shirts.

Ripley's "Hostess Crepe," 100% viscose-and-acetate rayon fabric, woven and dyed by Stonecutter Mills; approved for hand-laundering, for blouses and lingerie.

Rose Fabric's "South Wind," 100% viscose-and-acetate spun rayon fabric, finished by Allied Textile Printers, Raytex Dyers and Printers, Inc., and Housatonic Print Works; approved for hand washability, for sportswear and dresses.

Stehli's "Trikspun," an all spun viscose rayon fabric, finished by Acme Finishing Co., Lawrence Print Works, and United Piece Dye Works; approved for hand washability, for dresses.

Briggs F. Spach's "Laurelle," all spun rayon fabric, finished by Sussex Dye & Print Works; approved for hand washability, for dresses and sportswear.

Traub-Lyons-Oppenheim's new all spun rayon fabric, finished by Sales Finishing Co.; approved for washability, for pajamas.

Crest Fabrics' "Fandango," all spun rayon fabric, finished by Shamokin Dye & Print Works, Inc.; approved for hand washability, for women's and children's wear.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION
America's largest producer of rayon yarns and staple fibers

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N.C.; Philadelphia, Pa.; Providence, R.I.; Washington, D.C.; Wilmington, Del.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off.

Excerpts from this letter

AMOSKEAG-LAWRENCE MILLS
Manchester, N. H.
dated September 10, 1945

REALLY TELL THE STORY OF THE "H-W" CONDITIONER

Our "H-W" Conditioners have been in operation about four months, and in that time, we have not had one complaint as far as twist-setting is concerned, whereas, with our old conditioning unit, it was almost a weekly occurrence.

DEPENDABLE →

I don't know of any cleaner, neater or more efficient type of conditioning. ← **EFFICIENT**

LOW UP-KEEP →

The up-keep and maintenance of this new outfit is only about 10% of what the old one was.

, and now the longest time required for conditioning any one of these different types (cotton, rayon, acetate, wool, Aralac etc.,) of yarn is forty minutes. ← **TIME-SAVING**

QUICK SERVICE →

now yarn can be shipped the same day it is wound.

All in all, I consider the "H-W" Conditioner one of the best investments that we have made. ← **PROFITABLE INVESTMENT**

THE INDUSTRIAL DRYER CORPORATION

STAMFORD CONNECTICUT

enough. On a double-action machine, there are two strippers which revolve in opposite directions. These strippers are not continuously round but are made like two-bladed brushes. Each blade must be timed to contact the proper roll at exactly the right time, and in the proper direction to avoid damaging the points of the wires. It must not touch any roll of the other set, as the wire "lays" in the opposite direction and would be damaged. (See Fig. 2.)

As to the operation of a napping machine, or series of machines, to get a desired result with the least amount of work, there is much to be said, and perhaps much to be learned. The nature of the nap must be varied according to the final use of the fabric. A suede cloth would require a close, thick, short nap of perfect evenness, while a flannel would call for a fluffy, soft nap; and other fabrics would receive a very long, soft nap. On all napped fabrics, the pile or nap has more or less "lay" in one direction. This is not important on some fabrics, and is of utmost importance on others.

It is customary to designate one end of the cloth as the "head" end and the other the "tail" end where the lay is important. The nap then leans from the head toward the tail, just like the hair on a cat's back. By various manipulations, it is possible to govern the length of the nap within a wide range, also the closeness or thickness, and the "lay" or angle which the napped fibers form relative to the base cloth.

Modernization

(*Continued from page* 108)

nent role in the program at Adrian and Madora mills. They are used at all possible points. Roving frames have chain drives for bobbin-shaft, spindle-shaft, and twist-gear drives. The latter drive is unique. Instead of the former gear train in which a very large spur gear acted as idler, the present set up is a triangular chain drive over sprockets with a small gear at the apex to act mainly as a tension for the chain. The large idler gear, with its tendency to vibrate, has been removed entirely. Other chain drives are employed at the lap winders.

Individual drives have been designed and installed for all equipment except openers, pickers, and cards. The shop-made guards for these drives at the lap winders and combers were patterned, cut, and welded by mill mechanics. They are made of heavy iron screening.

Drawing frames have received careful attention in the program for better

(*Continued on page* 193)

The Dawn of a New Era

We rejoice in the return
of the old-time Yule,
the joy of the season's true meaning—
and heartily wish you a

Merry Christmas and
a bright New Year

DYESTUFFS • CHEMICALS • INTERMEDIATES

CIBA COMPANY, INC.

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NEW YORK, N. Y.

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For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

(Continued from page 190)

maintenance and operation. Steel top-rolls with synthetic coverings are used instead of the conventional iron rolls.

D. M. Williams, plant superintendent states, "Sticky rolls have been largely eliminated. Spur gears have been eliminated in favor of spiral gears, and the pitch was increased from 8 to 14 in order to obtain smoother driving power."

LONG DRAFT. The Adrain and Madora mills were among the first of fine combed-yarn mills to install long draft. Their normal yarn numbers are approximately from 40s to 100s. Formerly, the set up of machines included double drawing and three processes of roving, with conventional spinning. Whitin Inter-Draft is now used, followed by one conventional-draft fine roving frame, and Whitin Casablancas long-draft in spinning. One set of drawing, five slubbers, two intermediates and seven speeders were eliminated in one of the mill's yarn manufacturing units as a result of the long-draft improvements. The ability to obtain the same fine combed yarns with coarser hank rovings was, of course, the reason for the elimination of several of the fine roving frames, despite the fact that the latter frames remained conventional in draft.

PLANT LAYOUT. At the American Yarn, Inc., plant already described, layout was facilitated by the simple procedure of rebuilding parts of the mill and by buying modern equipment for the areas available.

At the company's Woodlawn mill, a different procedure has been followed. While some new machinery is going into this mill, notably the H & B cards, and the H & B spinning frames, the principal change has been accomplished by a new design for machine layout in the card room.

Before and after the change in layout is shown in Fig. 7. As will be noted, card alleys ran lengthwise of the mill formerly; and the layout was the conventional block system which means that all machines were massed solidly together, so that the mill consisted of a series of blocks. Thus all cards were blocked together, all drawing, lap winders, combers, etc.

The block system has been eliminated, and under the new layout, as shown in Fig. 7, the card alleys run crosswise of the mill and enough space has been cleared at the end of the alleys for units of breaker drawing and lap winders. Along the wall, therefore, the mill has a staggered layout of three breaker drawing frames and one lap winder in a unit. Of

ARMSTRONG

STEAM-TYPE HUMIDIFIERS

... are easy on your pocketbook!

A battery of Armstrong Steam-Type Humidifiers control relative humidity at this large Massachusetts textile mill.

ARMSTRONG STEAM-TYPE HUMIDIFIERS are easy on the pocketbook. Initial costs are low, and operational costs average only one cent per 24 hours per 1,000 cu. ft. of space humidified.

Installation is simple. These humidifiers are installed in existing steam lines just like unit heaters—put the humidity right where you want it.

Yet, ARMSTRONG STEAM-TYPE HUMIDIFIERS give you all these advantages:

- Operation is automatic and dependable.
- Relative humidity is maintained within close limits.
- Maintenance requirements are exceptionally low.
- Capacities to 850 lbs. steam per hr. at pressures of from 2-15 lbs.

Send for a copy of BULLETIN 158 for the complete story and valuable data and hints on textile plant humidification.

ARMSTRONG MACHINE WORKS

872 Maple Street, Three Rivers, Michigan

ARMSTRONG

STEAM-TYPE UNIT HUMIDIFIERS

When Manpower is Not Available

HOISTPOWER

WILL DO THE JOB FOR YOU

COFFING

SAFETY-PULL Ratchet Lever Hoists

MODEL Y-C Spur Geared Hoists

QUIK-LIFT Electric Hoists

Each is a quality product designed to give long service and speed up production, construction, materials handling and maintenance problems. For descriptive literature contact your supply house or write for Bulletin J4.

Coffing Hoist Co.

MANUFACTURER OF QUALITY PRODUCTS

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Sterling Ring Travelers

TWISTERS

Twister Travelers should fit rings and conditions. If you change work or are not satisfied, send a ring and tell us of these conditions.

Southern Representatives

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STERLING RING TRAVELER CO.

FALL RIVER, MASS.

course, several of these units are required for the Woodlawn card room.

Advantages obtained by the new system result from the fact that card cans can now be doffed and transported the short width of the room to the breaker drawing. There, after processing, the drawing cans can be creeled at the lap winder which is located nearby. And for the long haul, which is from the lap winder to the combers, the transport can be made in the form of laps which are creeled on a truck. This latter method of transportation is more economical and safer than the former method.

Surplus Disposal

(*Continued from page 139*)

country. The chief problem is in providing outlets for making the goods available. As it now stands, for example, a veteran in the Middle West may want to buy surplus goods located in Boston. Either he must buy "sight unseen" and pay the express charges, or he must make a trip to Boston, perhaps with no success. Veterans' organizations have taken the plan under advisement. Meantime, it has been sent to Senator O'Mahoney, chairman of the surplus property subcommittee of the Senate Military Affairs Committee. Administrator Symington warned that unless some such scheme is worked out, the government might be obliged to establish Federal retail stores or consider the plan of veterans' cash bonuses now in use in Canada to provide veterans with funds to buy surplus goods.

An all-important policy of SPA and one which has been subjected to considerable fire lately is that of pricing surplus goods in such a way that an individual item can have four different prices. For example:

Small retailer (served by wholesaler)	$1.05
Average sized retailer (minimum lot)	1.00
Big retailer (quantity purchase)	.95
Veteran retailer	.85

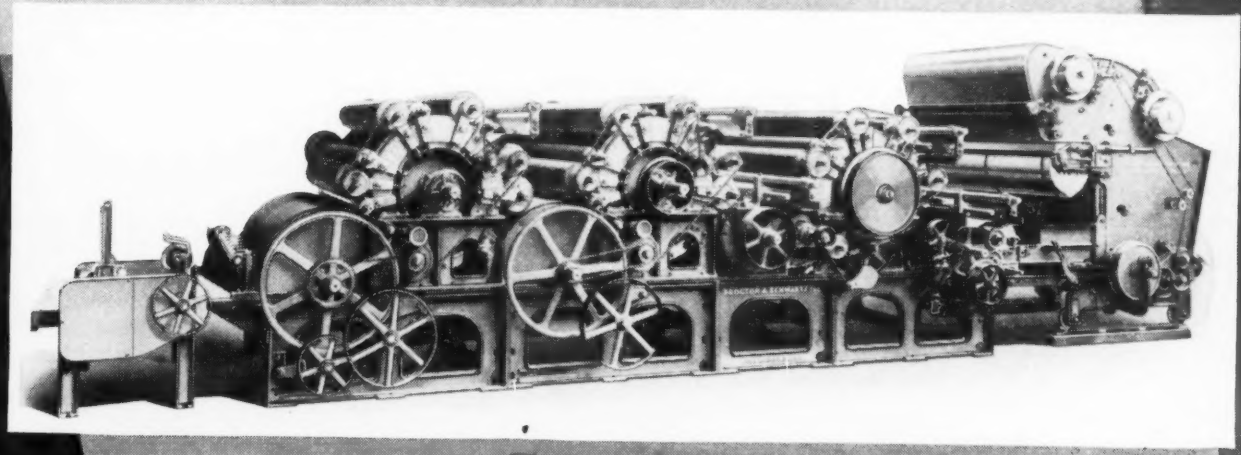
Research

(*Continued from page 115*)

tific research which have yielded miraculous results for other commodities, and the possibilities for improving cotton's competitive position through research are unlimited."

J. E. Adams, superintendent of Delta Branch Experiment Station, Stoneville, Miss., spoke on the mechanization of cotton production; and Francis L. Gerdes, senior cotton tech-

MORE TOP AND OTHER SALABLE CARDED WOOL FROM SAME AMOUNT OF SCOURED WOOL



Produced by

PROCTOR *Metallic Worsted* CARD

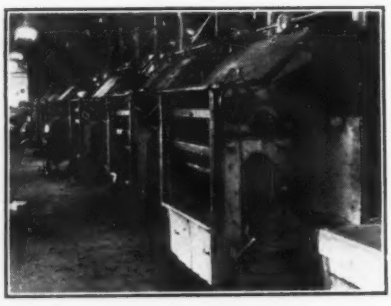
Proctor Worsted Cards equipped with Proctor Metallic Wire are chalking up astounding production records for mill operators. One of the greatest advantages that results from the use of these modern cards is that it is possible to greatly increase production of top and other salable carded wool from the same amount of scoured wool. The secret, if it can be called a secret, lies in the metallic wire clothing—an exclusive Proctor feature. Not only does the quality of carded wool improve, but production increases materially. Sometime ago one of the nation's leading worsted mills replaced 66 old cards with 12 entirely new Proctor Metallic Worsted Cards and had 7 cards reclothed with Proctor Metallic Wire. The new cards and the reclothed cards increased production 185.6% per card. Average production per card hour jumped from 32.54 lbs. to 92.67 lbs. Since the survey was made that revealed this astounding increase, the mill has completed the shift to Proctor Metallic Worsted Cards. The card room is now complete with 18 of the latest type and new records of production and quality are being recorded. Learn what Proctor Metallic Worsted Cards can do in your plant. Write for details today.

PROCTOR & SCHWARTZ • INC. • PHILADELPHIA 20 • PA.

"The Fleet Line"

STAINLESS FULLING MILL

9 Reasons Why This Prominent Woolen Mill Uses It



1. Suitable for all classes of goods. 2. Largest size can handle 12 to 14 pieces in 1 load, replacing 2 or 3 old machines. 3. Pays for itself in 3 years or less. 4. Even 800 lb. mill will handle as few as 2 pieces. 5. Saves about 20% in soap, 10 to 33% in fulling time, up to 25% in dead loss. 6. Uniform and superior finish from yd. to yd. and piece to piece. 7. Stainless steel back slope eliminates 90% of tangles. 8. Mechanical superiority, including vertical sliding doors, balanced drive, full elliptical spring pressure control, adjustable front guides, adjustable stop motion and roller bearings. Circular on request.

RIGGS AND LOMBARD

FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

STANSOMINE:

For all cotton fabrics.

Increases the speed and efficiency of boiling off and scouring operations. Improves the bleach. Produces a softer finish. Effectively emulsifies oils, starches, waxes. Ensures uniformly brilliant dyeing.

Our laboratory and chemists are at your service to render information and assistance in solving your problems.

Samples and quotations gladly furnished upon request.

Standard Soap Co. of Camden

205 South 2nd St. CAMDEN, N. J.

G. TANGUAY 281 Harris Ave., Woonsocket, R. I.

nologist of the Stoneville branch, pointed out that problems of marketing and manufacturing mechanically produced cotton must also be dealt with. A paper by W. O. Jelleme, of Pacific Mills, on cotton buying is summarized elsewhere in this issue.

DEMAND GREAT. Demand for cotton textiles, in both domestic and export markets, totaling between 11,000,000,000 and 12,000,000,000 yd. close to the production of the peak war year, was estimated as awaiting the industry during the next few years by Saul Nelson, director, Materials & Products Division, WPB.

Leo Fleming, of the Office of Surplus Property, stated that the textile division had about $8,000,000,000 of goods and apparel for disposal, of which one-half was strictly military and held no market threat.

W. C. Planz, of Textile Export Association, spoke of the necessity for a high level of exports. He urged strict control of Japanese industry. David Weintraub, of UNRRA, told of the role of that body in distributing textiles to the needy nations.

The textile design forum heard Richard F. Bach, of Metropolitan Museum of Art, speak of the museum's service to designers.

Dr. Royal B. Farnum, of R. I. School of Design pointed out that textiles, grounded in hand processes, were now giving way to the scientific approach. Dr. F. L. Dimmick, professor of psychology, spoke on color relationships. Ruth Reeves, leading textile designer, gave a demonstration of design creation.

Hugh Comer, of Avondale Mills, was elected chairman of the CTI. Dr. C. T. Murchison was re-elected president, and Paul B. Halstead, secretary-treasurer. New vice-presidents are Arthur M. Allen, of Baltic Mills, and A. G. Myers, of Textiles, Inc.

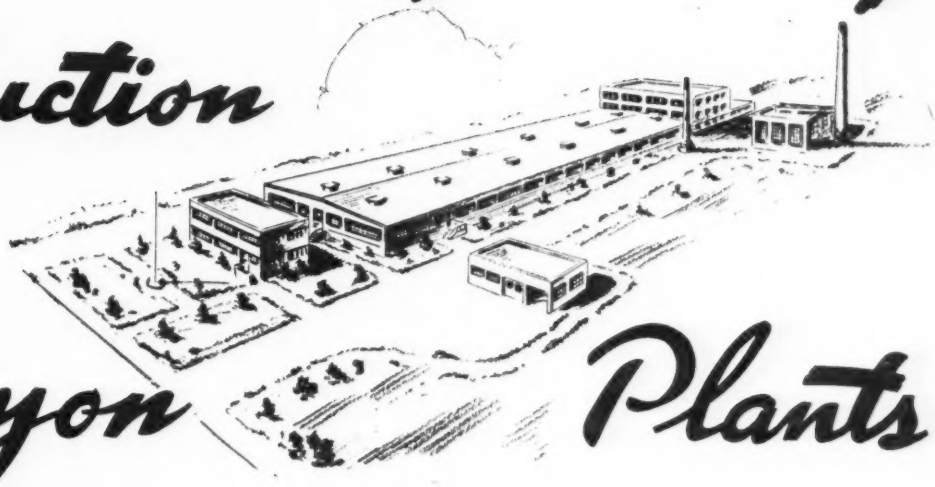
High Prices

(*Continued from page 119*)

The Germans prior to our arrival had flooded France with Bank of France notes, and prices were exorbitant. I observed prices of clothing and other necessities on display in shop windows in cities such as Marseilles, Nice, and Lyons in some instances before the Germans had actually moved out. The prices of most items, even then, were many times their actual value.

I personally know of instances in France where wealthy Europeans bid as much as 22 times the official rate for U. S. dollars, and it is still common practice to buy personal checks

Complete Engineering AND Construction OF Rayon Plants



There Is No Substitute for Experience

DOWN through the years — golden years for rayon—no organization in all the world has contributed so much to the establishment of independent rayon plants.

Since 1916 Oscar Kohorn and Company have designed, constructed, and operated rayon, staple fiber, and transparent paper plants throughout Europe, Asia, the Far East, North and South America.

Present day processes are to a large extent the direct result of our research and pioneering in this highly specialized field of industry.

Great developments and expansion lie ahead. Rayon and Staple Fiber will be produced in increasing volume and find a ready world market.

Investors are invited to consult with this organization, which is now prepared to meet your requirements, *from inception to operation in eighteen months.*

INQUIRIES WELCOMED

SERVICES RENDERED:

PLANT LOCATION:

(a) Survey on the ground to determine location, man-power, transportation, markets, raw material, power, fuel and water supplies.
(b) Determine size of initial plant, and plan its expansion.
(c) Consultation on types of yarn, denier, packaging, etc.
(d) Estimates for land and building, equipment, and working capital.
(e) Estimate production cost and overhead, sales and profit.

ERECTION OF BUILDINGS AND MACHINERY:

(a) Furnish complete plans for buildings and machinery.
(b) Supply all production machinery and auxiliary equipment.
(c) Send KOHORN engineers to erect plant, install machinery and building equipment.

STARTING PRODUCTION:

(a) KOHORN Chemists and Engineers, start the plant and bring it into full production.
(b) KOHORN experts help train local labor.
(c) Modern chemical and mechanical processes, installed by KOHORN, hold consumption of raw material and labor to a minimum.
(d) KOHORN engineers co-operate with your sales department in introducing product to the market.

PLANT EXPANSION:

(a) KOHORN'S interest in your plant, after it is turned over to you, continues. Consultation always available.
(b) Our latest patents are put at your disposal when plant expansion is contemplated.

OSCAR KOHORN & CO., LTD.

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QUALITY RICHMOND PRODUCTS

Less
Handling with
AFTER CHLOR
eliminates
3 to 5 handlings
Bleach with
HYPOCHLORITE
Rinse and Use
AFTER-CHLOR
Safe for Rayons Too

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Write for FREE Sample—
enough for a Trial Run
Our Technical Department
is at your Service

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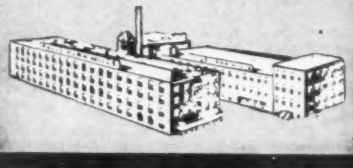
Fallspun
QUALITY
YARNS
FINE WOOLEN
& SPECIALTIES
ESTABLISHED 1904



Falls Yarn Mills
WOONSOCKET RHODE ISLAND

on American banks from persons with blocked accounts, for many times the official rate of exchange. Several of the most prominent industrialists in France told me if the franc were officially evaluated at, say, 150 francs to the dollar instead of the present 50 to the dollar, the present chaotic conditions would be greatly improved. This sounds paradoxical, but they were thinking of the black market, the potential tourist trade, and the purchasing power of the American soldiers in France whose pay in francs is worth only a small fraction of its actual dollar value. If the American soldier had additional francs I believe it would not greatly affect the general economy of the country, since his purchases are largely confined to souvenirs, liquor, and entertainment. It is possible to put restaurants off-limits and thus conserve food supplies for the local population.

HAND LOOMS. In an effort to give you a general picture of economic conditions in this Theater, I have digressed from my original intention of discussing the textile industry. Actually, there is no textile industry in French North Africa aside from a few hand looms here and there on which Arabs make coarse fabrics for their burnooses or crude rugs.

All textiles were imported in North Africa before the war, and industrialization of these colonies was discouraged. In my opinion, France will endeavor to retain these colonies as agricultural economies despite the fact that the populations are demanding more legal rights and self-sufficiency. There already have been instances of armed uprisings in Algeria, which is the most backward of the colonies. It is no secret that there is Arab unrest throughout the Mediterranean and Middle East. I personally know a number of Arab chieftains in North Africa who have told me of the gradual awakening of these peoples and their desire to become less dependent politically and economically on Europe. I think it will be many years before North Africa is industrialized to any extent unless the colonies are made politically independent of Europe. The purchasing power of the masses in North Africa is small and the market is limited. However, until France gets back on her feet and the status of Libya is settled, I believe it will be a good market for textiles and cheap necessities of all kinds.

Conditions in the textile industry of the United Kingdom are well known. Although it has been nearly 2½ years since I was in Great Britain, I am closely associated with the

(Continued on page 202)

FOR FULL EFFICIENCY

To develop the full efficiency of cards, equip them with BOOTH Card Clothing. There is a complete line; Cylinder Clothing, Doffers, Workers, Strippers, Angle Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

BOOTH
QUALITY
Card Clothing

Has a firm foundation of fabric or leather, yet is flexible, which reduces the possibility of shelling out. All clothing is available with rehardened points if desired.

Benjamin Booth Co.
Allegheny Ave. & Janney St.
PHILADELPHIA 34, PA.

LeaTex

The name that means leadership in
CHEMICAL
SPECIALTIES
for the
TEXTILE
INDUSTRY

"Always Reliable"

LEATEX CHEMICAL COMPANY
2722 N. HANCOCK ST., PHILADELPHIA, PA.

Announcement—

An entirely new

Versatile high speed

TRICOT MACHINE

Under development since before the war the new Robaczynski two bar, 26 and 28 gage Tricot machine is so constructed it will withstand speeds in excess of 500 courses per minute in a 180 inch width. It will accommodate a 21-inch beam or any other standard size.

This high speed versatile machine was designed by L. Robaczynski with the assistance of experienced Tricot associates. It is built in our modern plant in Brooklyn where for over 35 years we have been building knitting machinery. This Tricot machine has novel features and improvements unlike any other Tricot warp knitting machine.

A big producer over a long and carefree life for owner and operator may be expected of it. It can be seen now, by appointment, in our new show room at the plant.

ROBACZYNSKI
MACHINE CORPORATION
PURL STITCH (Links and Links) and FLAT KNITTING MACHINES

340 Ten Eyck St., Brooklyn, N. Y.

Look At Alabama!

Are you considering the establishment of a new plant?

Look At Alabama!

Will you require an adequate source of intelligent labor?

Look At Alabama!

Are cheap, high-quality fuel (coal, gas, oil) and a dependable source of electric power important factors in your operation?

Look At Alabama!

Will you need an unlimited supply of relatively pure water?

Look At Alabama!

Are plentiful rail, water and highway transportation facilities and market accessibility important considerations?

Look At Alabama!

Do you require a year 'round good seaport for export or import?

Look At Alabama!

Would a pleasant, temperate climate help lower construction, production, and maintenance costs?

Look At Alabama

During the past decade, many industries (steel, aluminum, paper, gypsum, silk, chemical, electrical appliances, and others) have established plants in Alabama after careful consideration of advantages offered. It was our pleasure to collaborate with many of them, at their request, in the preparation of economic surveys covering specific locations in Alabama. This service is offered you.

INDUSTRIAL DEVELOPMENT DIVISION

ALABAMA POWER CO.

Birmingham, Ala.

A loom that turns easily by hand!

SETTING the reed correctly in relation to the fell of the cloth on a C&K Type S Automatic Rayon Loom requires accurate, skilled handling of certain loom parts.

The weaver turns the handwheel of the crankshaft with one hand while his other hand manipulates the take-up.

Unless this setting is properly made, a mark will appear in the cloth and imperfect fabric results.

When crankshaft, take-up shaft, bottom shaft and rocker shaft are mounted in Hyatt Roller Bearings, the loom turns over easily. Accurate settings and better cloth result. Weavers are less tired at the end of a shift.

Hyatts reduce friction, hence require less power than plain bearings. Hyatt equipped looms use less lubricant, minimize maintenance, produce more cloth.

Specify this bearing by name when you buy new looms. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

Look At Alabama!

Are you considering the establishment of a new plant?

Look At Alabama!

Will you require an adequate source of intelligent labor?

Look At Alabama!

Are cheap, high-quality fuel (coal, gas, oil) and a dependable source of electric power important factors in your operation?

Look At Alabama!

Will you need an unlimited supply of relatively pure water?

Look At Alabama!

Are plentiful rail, water and highway transportation facilities and market accessibility important considerations?

Look At Alabama!

Do you require a year 'round good seaport for export or import?

Look At Alabama!

Would a pleasant, temperate climate help lower construction, production, and maintenance costs?

Look At Alabama

During the past decade, many industries (steel, aluminum, paper, gypsum, silk, chemical, electrical appliances, and others) have established plants in Alabama after careful consideration of advantages offered. It was our pleasure to collaborate with many of them, at their request, in the preparation of economic surveys covering specific locations in Alabama. This service is offered you.

INDUSTRIAL DEVELOPMENT DIVISION

ALABAMA POWER CO.

Birmingham, Ala.

A loom that turns easily by hand!

SETTING the reed correctly in relation to the fell of the cloth on a C&K Type S Automatic Rayon Loom requires accurate, skilled handling of certain loom parts.

The weaver turns the handwheel of the crankshaft with one hand while his other hand manipulates the take-up.

Unless this setting is properly made, a mark will appear in the cloth and imperfect fabric results.

When crankshaft, take-up shaft, bottom shaft and rocker shaft are mounted in Hyatt Roller Bearings, the loom turns over easily. Accurate settings and better cloth result. Weavers are less tired at the end of a shift.

Hyatts reduce friction, hence require less power than plain bearings. Hyatt equipped looms use less lubricant, minimize maintenance, produce more cloth.

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You'll Need
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The
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Optonics
The Science of
COLOR IN
INDUSTRY

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Because the functional uses of color are acquiring an ever-increasing importance, you'll want to be thoroughly posted on the Optonic Color System ... the new science of using color to improve production, safety conditions and employee morale, and reduce absenteeism. A note on your business letterhead will bring you our new booklet on the subject—"Color Power for Industry."

THE ARCO COMPANY
CLEVELAND, OHIO • LOS ANGELES, CALIF.

ARCO
Paints for Industry

(Continued from page 198)

British in this Theater, and many of them are of the opinion that Great Britain will be hard pushed to meet her domestic requirements for some time to come. I understand that rationing in the United Kingdom is far more stringent today than it was two years ago. Textiles of all types are very difficult to secure except the "utility clothing" which is sold on a ration-point basis at controlled prices.

If the monetary exchange situation is stabilized by the United Nations, I believe the markets in Europe, Africa, and the Middle East will for a long time be substantial. In Western Europe, there is a huge population which in normal times has a relatively high purchasing power per capita. Europe is starved for American products, and its business men and industrialists will bend over backwards to do business with U. S. firms to the extent the current financial situation permits.

ITALIAN TEXTILES. The textile industry of Italy has not been damaged by the war to the extent generally believed. Actually, the true status of the Italian textile industry will not be known until after conditions are stabilized, due to the inadequacy of available records. Before the war, the industry was under the complete control of the Fascist Party, which instituted a movement in 1934 to make the industry independent of foreign markets. Central organizations were set up to control the purchase of raw materials, as well as sales and types of goods produced. The directors of these organizations generally were stockholders of the companies involved and frequently used these offices to exploit their personal gains. It is alleged that all books were "doctored" as desired to avoid taxation or to further Fascist propaganda during this period.

The cotton branch of the textile industry, which had over 5,500,000 spindles and 120,000 looms before the war, is believed to be from 90 to 95% intact. It is further understood that other branches of the textile industry—wool, rayon, silk, and hemp—have been damaged physically no more than 5 to 10%. The jute plants were affected more seriously, having been damaged from 20 to 30% of productive capacity.

Although I have not personally studied the textile industry of France, I understand that no more than 10% of the production facilities were destroyed by war, although some individual plants were completely demolished. French manufacturers have told me that substantial quantities of finished goods are in the possession of Italian manufacturers, who are hiding these products in hopes of making larger profits than are currently possible; but I have no Italian confirmation on this and have seen no effort being made to smoke out these goods and release them to the needy Italian population.

Five M's

(Continued from page 135)

that management must inaugurate. I have just managed the purchase of several thousand yards of soft cloth which is being made into wrappers that will enfold five dozens of sheer nylon hosiery. From operator to operator, it must protect the stockings from pulls of every type. Special racks at each looper, seamer, inspecting table, and preboarding machine are being provided to assist the wrapper to do a good job. All welts or toes will be in the same end of the wrapper. No fumbling by an operator to get what he wants.

This soft sheeting is used in pieces 36 in. wide and 68 in. long, as shown at the top of Fig. 1. Four tie strings, marked *A* are sewn to the sheeting, and the ends are left free. A fifth tie string, *B*, goes through two loops anchored to the sheeting and is also sewn at point *C*. This center draw string enables the operator to pull the center very tightly to prevent stockings from slipping out.

The bottom portion of Fig. 1 shows a rack made of ⅜-in. galvanized pipe with floor flanges on the bottom. A canvas cover is sewn on, and the soft cloth wrapper already described is laid on this canvas with the strings hanging over the side and the ends of the cover, *D* and *E*, hanging down from the ends.

When 5 to 10 doz. pairs of hose are placed in the wrapper, the ends *D* and *E* are lifted up and folded toward the center. The outside lengthwise edges are brought to the center by lapping one over the other, so that no stockings are exposed. The strings are then tied. This bundle can now be handled with little danger of damaging the hose.

PREBOARDING. I noticed in one plant they were so anxious to get production that certain employees were hired to pick up stockings by the welt and hand them to the preboarder operator.

We have built overhead racks at our preboarding machines on a level with our board toe tips. When a bundle of hose is laid in this rack with the welt facing the boards, it is almost

(Continued on page 206)

CEGLIN* *Finish for Textiles*

FOR GREATER ABRASION RESISTANCE

CEGLIN is a lasting cellulose finish that increases fabric strength and durability . . . stabilizes shrinkage and stretching . . . increases resistance to slippage, distortion and abrasion. CEGLIN can be applied before boil off . . . during mercerization . . . before or after dyeing . . . or as a final finish. It does not require curing nor ageing at high temperatures.

How CEGLIN *Increases the Intrinsic Value of Fabrics*

- Provides a finish of distinguished character.
- Stands up under laundering.
- Adds tensile strength.
- Stabilizes shrinkage and stretching.
- Increases resistance to slippage or distortion.
- Makes possible a wide range from softness to crispness.
- **IMPROVES RESISTANCE TO ABRASION.**
- Helpful in solving manufacturing problems.

Made only by SYLVANIA INDUSTRIAL Corporation

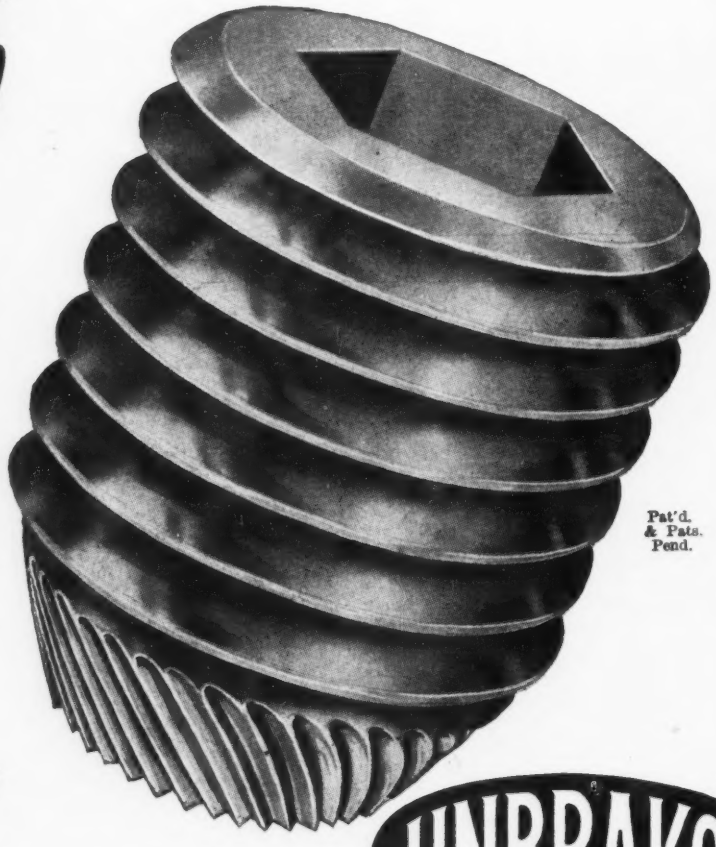
Manufacturers of cellophane and other cellulose products since 1929

General Sales Offices: 122 East 42nd St., New York 17, N. Y. ★ *Plant and Principal Office:* Fredericksburg, Va.

SYLVANIA TEXTILE FINISHES ARMY E NAVY

• Reg. U. S. Pat. Off.

Can't Back Out



Pat'd. & Pats. Pend.

UNBRAKO

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The "UNBRAKO" Socket Set Screw with Knurled Cup-Point can't and won't back out, because the knurls dig-in and hold fast. Just tighten as usual . . . and then forget about it, for the knurls will grip and *hold* in spite of the most severe vibration. This "UNBRAKO"—a dependable self-locker—will save you maintenance costs. Send for the "UNBRAKO" Catalog of Socket Screw Products today. Sizes from #0 to 1½" in diameter.

The "UNBRAKO" Welt-Bar Screw

. . . uniformly strong and accurate—already performing satisfactorily in many mills.

Knurling of Socket Screws originated with "Unbrako" years ago.

OVER 40 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

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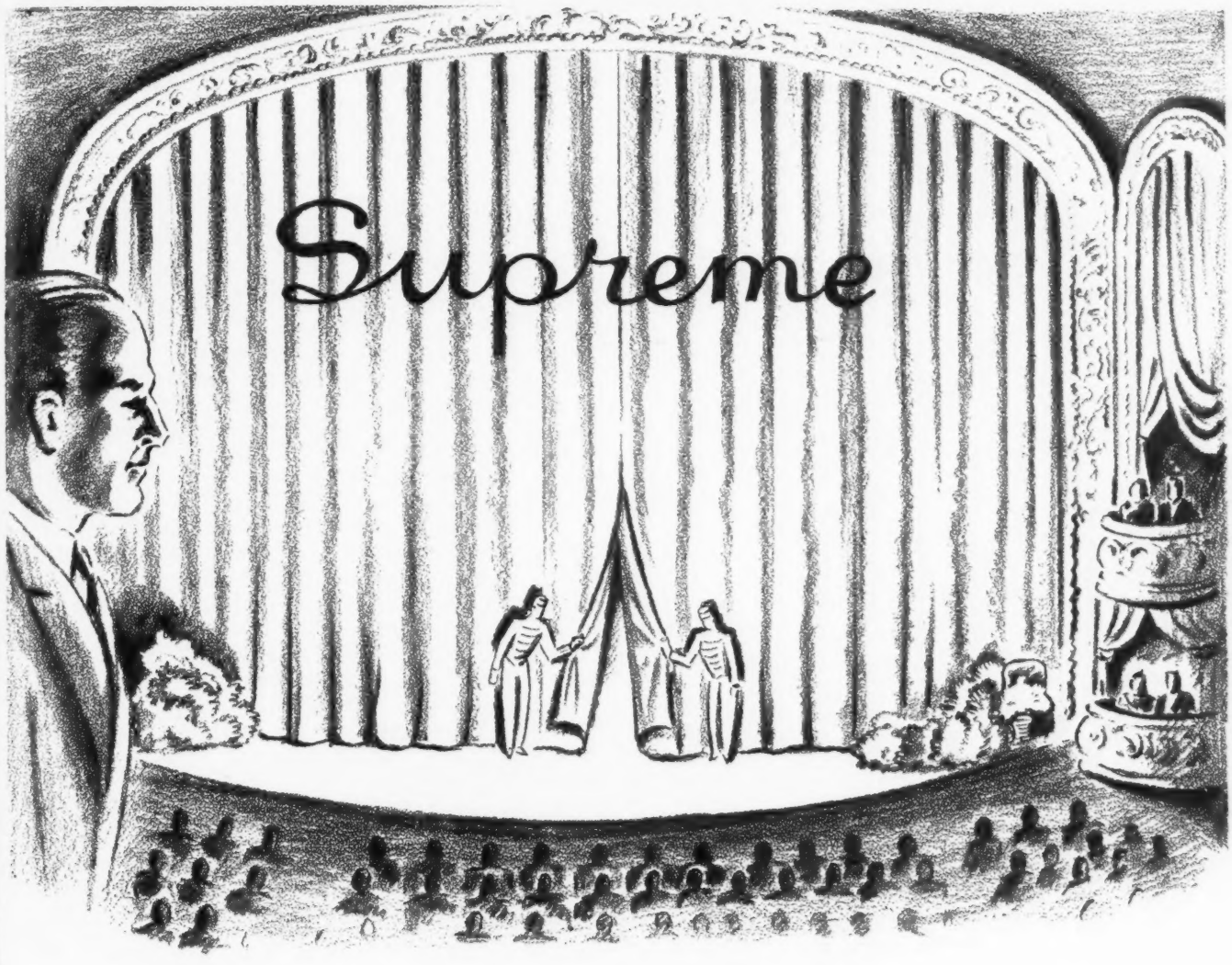

A Revelation In Multiple Feed

CIRCULAR KNITTING

This development in knitting is so momentous that we urge you to await its presentation.

Thirty years preeminence in the design and manufacture of knitting machinery enables us to perfect this SUPREME KNITTING MACHINE, which so fully justifies its name.

The design and production of the NEW SUPREME KNITTING MACHINE may be stated, conservatively, as revolutionary in speed, simplicity and efficiency.

This Supreme, multiple feed, circular knitting machine may be seen, by appointment, at the factory.

SUPREME KNITTING MACHINE CO., INC.

105 JOHNSON AVE. BROOKLYN 6, N. Y.

Both Methods

FOR RAYON and ACETATE YARN DYEING

Skein dyeing for yarns put up in that form and for many specialties.

Package dyeing for yarn from cones or tubes, and where large batches are wanted.

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Atlantic Rayon CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

BRANCH OFFICES:
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New York 1

3701 North Broad St.
Philadelphia 40

★

(Continued from page 202)

duck soup to slip them on the preboarding forms. Only half the work. One lift gets them all up at one time, and the rest is a downhill pull. Stripped from the boards, they go directly into dye bags. Here, another handling is done away with. The device which we use at the preboarding machines is sketched in Fig. 2. The holder for the bundle is suspended from the ceiling.

When the efficiency of our operators on the preboarding machines brought them to the point where they were having to wait for the steam to exhaust, we did something about it. How? By changing the factory design of in and out steam control to 2-in. gate valves, which now permit full steam pressure in 13 sec. and exhaust in 9 sec. The result is that now the machines wait for the operators.

Fig. 3 shows roughly how we hooked up the two valves, so that when one is open the other is closed. A common arm connects the two. This device, made possible by quick-opening valves, saves considerable time and effort. Through this and other modifications, an 8-hr. production of 70 doz. went to 250 doz. on one machine.

This is an example where management gave men a machine on which maximum production could be reached with the material. Let's do away with that sore thumb we call mistakes. It can be replaced with a better *m* we know as method: a proper and methodical way of getting results.

How often did I impress on the men when I was a dyer that they should do everything every day in the same way, and even then enough would happen. But when it did occur, we knew where to look for trouble. Therefore, we followed a method or plan.

Management certainly has to determine the method or procedure to be followed in the manufacture of its product. Proper methods prevent mistakes.

Ramie—

(Continued from page 98)

An extension of the cordage use for ramie is its use in fish nets. It is also reliably stated to have been used in canvas and fire hose from time to time, but it has not developed into a standard item in those lines.

One of America's briefly successful ramie ventures was that of G. W. Schlichten, who made underwear and hosiery of ramie with alleged healthful properties because of its water absorption and ease of cleansing. Mr. Schlichten's difficulties are probably reflected in the fact that in the 18 years from 1905 to 1923 he operated in seven different locations, starting in the east. He disappeared from textile directories after moving to California.

Another commercial use in past years, also springing from a German source, was in the fabrication of mantles for incandescent gas burners, in particular the Welsbach burner. Here its affinity for the metallic salts with which it was impregnated gave it virtue, and it was said to be superior in performance to other natural fibers in this use. However, it was later matched by a synthetic yarn which is in use today in this limited field.

Ramie has been promoted as useful for blending with almost all other fibers, and blended fabrics of seemingly excellent characteristics have been prepared. With wool it was said to add strength and cut shrinkage; with rayon, it increased wet strength; with cotton, it lent linen characteristics. Several reworked-wool houses have carried treated ramie fiber for blending with wool at various times but without developing stable demand.

The fiber has been made up experimentally in small lots into a wide variety of apparel and domestic fabrics with reported success by the promoters but no evidence of effect on the market or permanence of the application.

Competent authorities believe that ramie might well be studied as a structural element in plastic products for some uses. It possesses strength for a straight pull, and could be laid in the plastic product to take full advantage of that property without likelihood of subjection to torsional strains. For this use, a batt might suffice; in which case the spinnability of ramie would not be put to proof. Already sisal is being used in the structure of plastics in much this way.

Similarly competent authorities believe that ramie, properly handled, might be made competitive with linen; but they recognize that linen (or, more properly flax) has given no evidence of displacing other more important textile fibers. They recognize that jute, grown next door to ramie in India, is a serviceable fiber used all over the world for limited and well-defined purposes, but it has never been promoted seriously for universal use nor for growth outside of the areas in India where it is raised and prepared so satisfactorily.

CLAIMS OUTRUN FACTS. Contrasted with the foregoing facts regarding the uses or traces of uses, which the record and the memory of men in the field have disclosed, are the claims

(Continued on page 210)

Smart WOMEN ARE WEARING *Washable Woolens*

SHRINKAGE-CONTROLLED WITH LANASET* RESIN

LANASET is the fabric finish that insures the washability of woolens. It controls shrinkage, stabilizes the fibers, maintains the natural beauty, texture, and absorbency of the fabric. It makes woolen clothes easy to care for, a joy to wear, and a pleasure to sell. Merchandise processed with LANASET is now on sale throughout the country. It is identified with the LANASET tag—the mark of washability and longer wear—your assurance of satisfactory sales and bigger profits.

Our technical service is at your disposal to help in planning new woolens with LANASET so that fabric and finish may be coordinated for best results.

AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY
New York • Boston • Philadelphia • Providence • Charlotte • Chicago

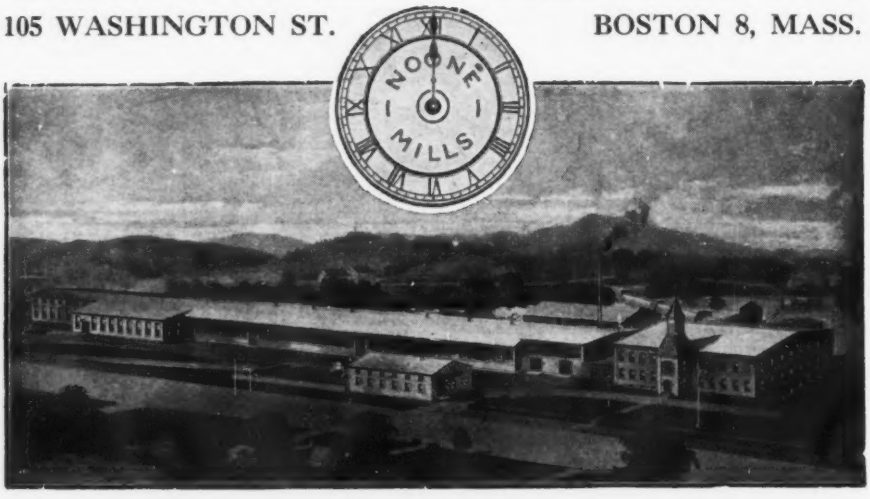
Lanaset
FOR WOOL SHRINKAGE CONTROL

*LANASET is a registered trade-mark of American Cyanamid Company applied to its melamine resin for controlling wool shrinkage. The process under which it is applied is covered by United States re-issue Patent No. 22,566.

William R. Noone & Company

A. ERLAND GOYETTE, *President* — ARNOLD T. MALONE, *Treasurer*

105 WASHINGTON ST. — BOSTON 8, MASS.



Established 1831

Noone's Standard Slasher Cloths

Ask for **NOONE'S SLASHER CLOTHS** by name or style number.

Long experience in manufacturing Slasher Cloths and continuous experimenting have enabled us to produce several types of Slasher Cloth, each especially constructed to give best results on the particular kind of yarn to be sized.

The proper Slasher Cloth for each type of yarn means properly sized warps, less loom stops, easier weaving, more and better production, *and lower cost.* We can supply you the right cloth for your particular work.

On request we will have our representative call and discuss Slasher Cloths with you.

We are the oldest manufacturers of Slasher Cloth in America. Our experience enables us to build a Slasher Cloth that will meet your most particular demand. Use **NOONE'S SLASHER CLOTHS** and be convinced.

Sole Agents for

The Joseph Noone's Sons Company

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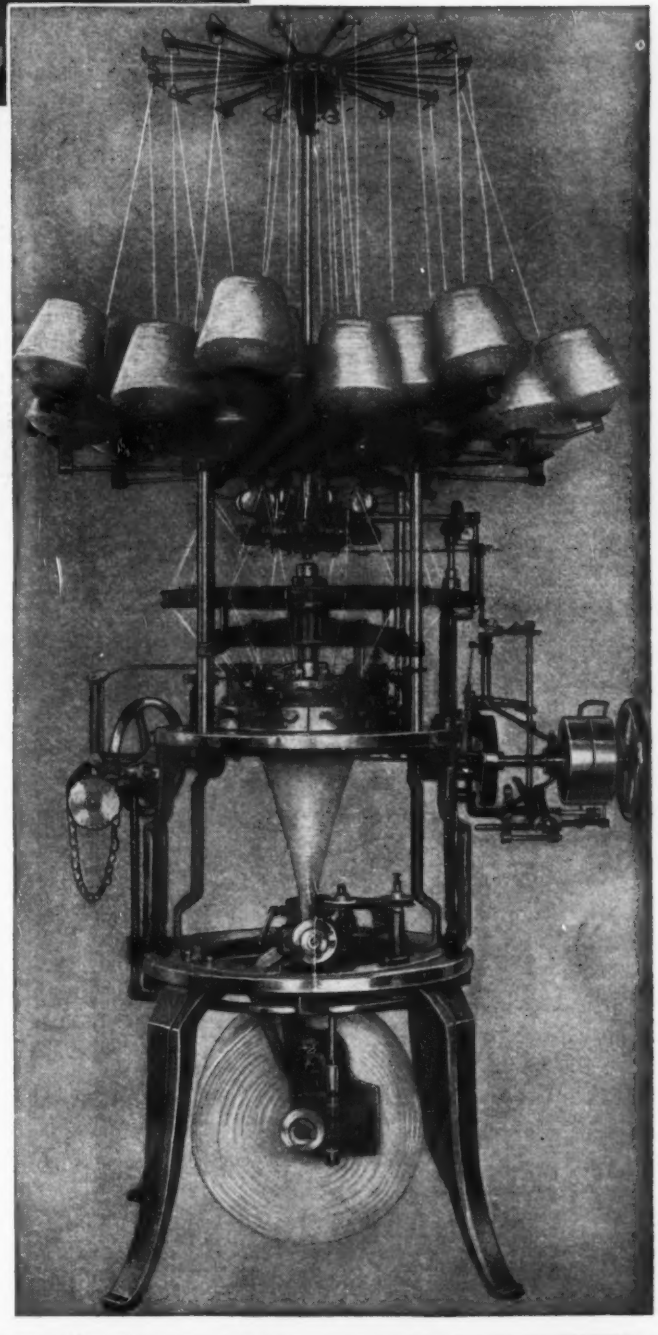
Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

2 x 1 = 2

MULTIPLY *Your* PRODUCTION ... on the same floor space!



Every alert knitting mill in the country is striving to compete for the increasing demands of the day. If a mill has been on a near-capacity schedule, this is usually difficult without expensive fundamental plant alterations or additions. However, there is ONE way it can be accomplished; effectively, profitably; replace your 8-feed machines with the

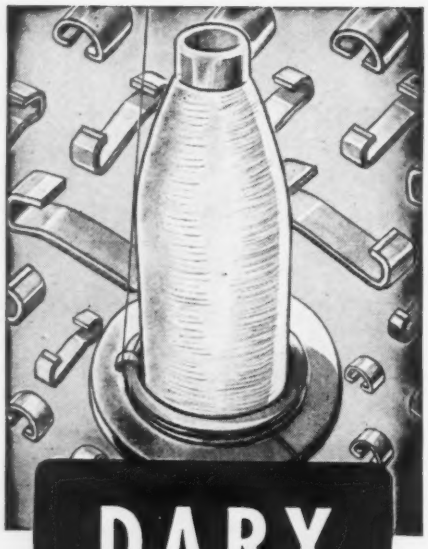
WILDMAN MULTIPLE-FEED RIB MACHINE

Without requiring even one more inch of floor space, and using only about a third more power, this ultra-modern machine will immediately lift your production figures to

DOUBLE or BETTER

In addition, it delivers a better, finer, more uniform garment, and gives a trouble-free operation that you will appreciate. May we tell you more about this machine?

WILDMAN MFG. CO., Norristown, Pa.



MEAN

New Dollars For Old!

When you buy famous Dary Ring Travelers, you actually exchange old dollars for new.

That's because Dary Ring Travelers assure a spinning and twisting economy that puts money in your pocket and produces the type of spinning and twisting results that make new customers and satisfy old.

Ask the technically trained Dary representative in your area to call. Find out why Dary Ring Travelers and Dary representatives are a welcome twosome in so many mills, north and south.

DARY
★ PROCESSED ★
SYMBOL OF SUPERIORITY

The DARY RING TRAVELER CO.
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JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
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H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

(*Continued from page 206*)

made in some quarters. One analysis of the fiber's possibilities listed uses which "processors can now anticipate" as the following:

War Uses: Airplane and parachute cloth; parachute cord and webbing; military uniforms and raincoats; tents, hammocks, tarpaulins, and knapsacks; belting and cordage; powder bags; gas masks; absorbent gauze, bandages, and surgical dressings; tire cords; fire hose.

Postwar Uses: Filter cloth for air conditioning and other industrial purposes; fish nets, sails, and marine canvases; bond and currency papers; wall paper; cigarette paper; cellophane; typewriter ribbons; conveyor belts; rugs; braids; upholstery fabrics and webbing; curtains and mosquito netting; thread; all types of clothing and rainwear; fine hosiery; toweling; table linens.—One might well ask what textile use has been omitted.

Further claims of ramie utility are to be found in *The Chemurgic Digest* for April 30, 1945, as follows: "Some of the new materials include an attractive soft 'Palm Beach' cloth which will hold its shape and does not feel 'scratch' against the skin of the wearer. . . . Desirable in the operating room for bandages. . . . Mixtures of ramie and wool for coats, suits and skirts, handsome ramie corduroy of great durability, combinations of ramie and rayon for blouses and other items of women's wear. . . . A toweling material which is stronger when wet than dry."

Articles appearing in Florida newspapers from time to time contain such statements as this: "Commercial interest in ramie stems from the search for a substitute which will compete with cotton, rayon, and nylon in the textile fields."

WHY NOT? The barriers which have always stood in the way of reaching these goals are, briefly: (1) Lack of economical decorticating and degumming processes, (2) difficulty in fabricating on conventional machinery and by accustomed methods, and (3) peculiarities to the fibers micellar structure.

These barriers have been stated in slightly different form as follows:

1. It is difficult to decorticate or degum.

2. Until recently no decorticating machinery had been invented that could satisfactorily process sufficient quantities to compete commercially with the cheap hand labor of China and the Orient.

3. The fiber had a tendency to brittleness due to incomplete removal of resins.

4. Even China grass, landed in this country at 30¢ a pound, was too expensive for spinners and weavers.

A similar viewpoint is expressed by a consultant whose comment to a client was made available to us. He states: "None of the [ramie] enterprises which have been started have come to any commercial success. In general, the reason for failure has been lack of efficient mechanical means for separating ramie fiber from the stalks, efficient methods of degumming and cleaning the fiber and preparing it for spinning. Also there has been considerable difficulty in spinning the fiber on conventional machinery in this country. It seems that all the difficulties mentioned have been solved technically, yet economy of operating the processes in this country has yet to be proved. Recent experiment has proved that ramie can be spun successfully on worsted machinery but cannot be handled on cotton machinery without first cutting the fiber into short lengths, thereby destroying one of its finest qualities."

George A. Lowry, on page 90 of the February, 1934, issue of TEXTILE WORLD, wrote: "The fascinating beauty of ramie has deceived many and caused heavy losses. Among fibers it belongs in the 'follies' class, for it has broken many hearts."

The concluding paragraphs of an article published in the *Industrial Bulletin* of Arthur D. Little, Inc., February, 1932, sums up the developments of the last 50 years of ramie in the Western World as follows:

"History shows many attempts to develop a ramie industry in the United States, but all have been little more than an experiment and in many cases the activity has been rather in the selling of stock than in any real, sincere, creative effort. Even if we assume that a perfect system of machine preparation of ramie fiber had been found, and machinery for its fabrication into merchantable goods perfected, there is still a question whether any very great ramie industry could be established.

"Failure in introducing ramie into the United States is very largely due to difficulties encountered in the proper and uniform degumming of the fibers, suitable equipment for converting into yarns, as well as attempts to operate on a small scale. It is probable that large operations are essential to commercial success. One has only to follow the story of the various attempts to introduce a linen industry into the United States to be made cautious, even with a fiber which has not had such an unfortunate history as ramie, a history made up of a long series of failures and financial loss."

FOR ALL COMMERCIAL TEXTILE FIBRES AND FABRICS...

...the safe bleaching agent

PENN SALT

Hydrogen Peroxide

H_2O_2

A 100 volume Hydrogen Peroxide that is economical effective and reliable. This stabilized product has uniform oxidizing action that assures safe and consistent results.

Limited amounts of Hydrogen Peroxide are now available for industry and Penn Salt is making every effort to expand manufacturing facilities for anticipated demands.

Penn Salt Hydrogen Peroxide is supplied in 120 lb. carboys and 265 lb. drums. For specific information about Hydrogen Peroxide and other Penn Salt products, write us.

OTHER PENN SALT PRODUCTS FOR THE TEXTILE INDUSTRY

Caustic Soda • Soda Ash • Sulphuric Acid • Hydrochloric Acid • Chlorine • Perchloron • Sodium Hypochlorite • Chloride of Lime • Bleaching Powder • Carbon Bisulphide • Ammonium Persulphate • Potassium Persulphate • Anhydrous and Aqua Ammonia

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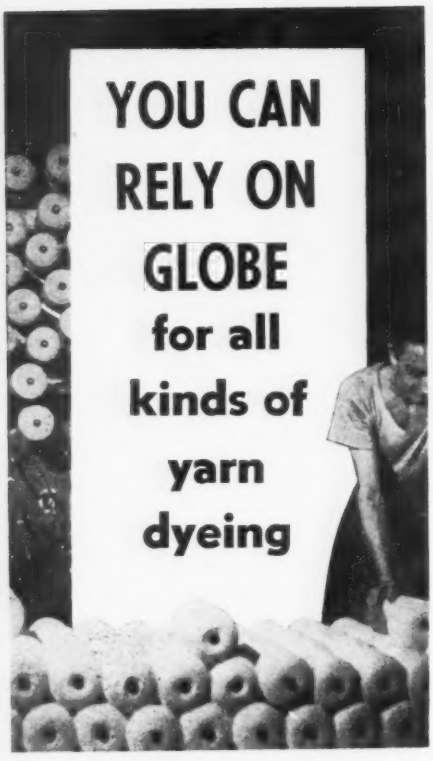
NEW YORK • CHICAGO • ST. LOUIS • PITTSBURGH • CINCINNATI • MINNEAPOLIS • WYANDOTTE • TACOMA



FOR PACKAGE DYEING—

—Globe's equipment compares favorably with that of any other plant in the country, with strictly modern machines and dyers who know how to get the highest quality obtainable by this economical dyeing method.

FOR OTHER KINDS OF YARN DYEING

—Including skein and warp dyeing, Globe has been famous for more than eighty years.

We dye cotton, rayon, nylon, Aralac and other synthetic yarns, also their combinations.

Globe DYE WORKS CO.

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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 214. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y. Be sure to give your name and company connections.

1. "Equipment For Cotton Mills," a 20-page booklet published by Westinghouse Electric Corp., illustrates horizontal and vertical motor drives for a wide range of textile machinery. Other subjects discussed include efficient lighting, electronic air cleaning, and electrical-circuit accessories.

2. Why stainless steel resists corrosion and data on its use in various industries, including the textile, are presented in a handbook for engineers and laymen prepared by Eastern Stainless Steel Corp. The handbook contains 96 pages and is well illustrated.

3. Steam traps and steam-type humidifiers for a number of industrial applications are discussed in the Armstrong Magazine, Issue No. 3, published by Armstrong Machine Works. Several plant installations of the traps and humidifiers are illustrated.

4. "Industrial Safety Tomorrow," a 16-page pamphlet prepared by the National Safety Council, contains a program designed to help industry meet the threat of increased accidents. The pamphlet contains a list of 32 main elements of an effective safety program.

5. Industrial drying from the standpoint of principles, processes, and methods is the subject of Catalog No. 131 made available by J. O. Ross Engineering Corp. The discussion touches on such subjects as infrared drying, sources of heat, oven construction, etc.

6. Dyeing with pigment colors and the processes used for pad dyeing cotton, rayon, spun-rayon, nylon, and other fabrics are described in Bulletin D-1 released by Aridye Corp. Much practical information on dyeing with pigment colors is included.

7. Textile process-water conditioning for operations of washing, bleaching, and dyeing is discussed in a booklet issued by Calgon, Inc. The discussion of Calgon, its properties, and uses are given.

8. Counting, timing, and recording devices of several types and for a variety of industrial applications are described in an 8-page catalog published by the Production Instrument Co. Illustrations and prices are given.

9. An oil-burning system for industrial combustion, such as firing furnaces, is described in Bulletin No. 109, issued by Peabody Engineering Corp. The principles of the system are described and illustrated by schematic drawings.

10. Materials handling from the standpoint of cost is outlined in "Industrial Logistics," a booklet issued by the Elwell-Parker Electric Co. It is stated that load transportation offers the greatest opportunities for plants to effect savings.

11. Thermostat and pressure switches, with descriptive data on a number of types of each, are presented in catalog and price sheet No. 45-91-C, published by United Electric Controls Co. Prices of all models are included.

12. Combatting dust and lint by applying white mineral oil to cause them to settle is described in Technical Data File F-39 issued by L. Sonneborn Sons, Inc. Two types of oils are described, and the method of applying them is given.

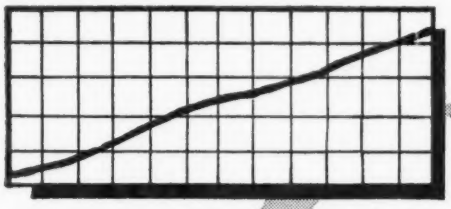
13. An automatic heeler for knitting French heels and for joining soles to heels of full-fashioned stocking blanks produced on legger or single-unit machines is described in literature issued by Robert Reiner, Inc. A schematic drawing illustrates the knitting stitches.

14. An estimator for air-express shipments which shows the charge for shipping any weight any specified distance in air mileage is being made available by the Railway Express Agency. The estimator also includes a map of the airlines between the principal cities in the United States.

15. Mechanical handling of materials with the Towmotor "one-man-gang" is illustrated in Vol. III of "Handling Materials," published by Towmotor Corp. Techniques of handling loads of various materials and many sizes are shown.

16. Diesel engines in six sizes, ranging from 34 to 190 brake horsepower, to be used as the source of power for industrial

There Are No Dips in the Hooker Quality Curve...



With Hooker Chemicals high quality is a constant. That's why so many in the textile field who have been securing their chemicals from Hooker are able to maintain their own high quality standards without difficulty.

Because Hooker makes over one hundred chemicals, all of consistent and dependable high quality, many of your needs can be supplied from one reliable source. Whether you need solvents, mordants, desulfurizers, chlorinating agents, intermediates, or catalysts, call on Hooker.

A few of the Hooker chemicals that may be of interest to you are listed below. More comprehensive information and samples are available when requested on your letterhead. Send also for the 1945 edition of Hooker General Products List. It gives brief, pertinent information on all Hooker Chemicals.

Product (Chemical Formula Molecular Weight)	*Hooker Specifications*	*Suggested Uses*
Aluminum Chloride, Anhydrous $AlCl_3$; 133.3	Aluminum Chloride, min. 99%. Iron, max. 0.05%. Heat of solution small Cal/gm. min. 550.	Catalyst in synthesis of dyestuffs and intermediates.
Antimony Trichloride, Anhydrous $SbCl_3$; 228.1	Antimony Trichloride min. 99%. Iron and Arsenic, max. 1%. Lead, 0%.	Catalyst in organic syntheses; mordant in textile printing. Moisture and fireproofing textiles.
Benzoic Acid—USP and Tech. C_6H_5COOH; 122.1	Benzoic Acid, min. 99.3%. Water, max. 0.2%.	Manufacture of dyes. Mordant.
Chlorparaffin Resin 70 $C_{24}H_{29}Cl_{21}$; 1063 (Aver.)	Chlorine, min. 68 to 72%. Free HCl, max. 0.05%. Iron, max. 0.01%. Softening range 90° to 100°C. A brittle resin, soluble in aromatic solvents, difficultly soluble in mineral spirits.	Treating textiles to make water, fire, and mildew-proof.
Cyclohexanol (Hexahydrophenol) $C_6H_{11}OH$; 100.1	Cyclohexanol (High Grade) min. 98%. Distillation Range 100%, 158° to 162°C.	Solvent for dyes. Chemical intermediate.
Ferric Chloride, Sol'n $Fe\,Cl_3$; 162.2	$Fe\,Cl_3$ 40 to 50%. $Fe\,Cl_2$ max. 0.20%.	Mordant in dyeing and printing textiles; as oxidizing agent in making dyes.
Lauryl Pyridinium Chloride $C_5H_5N(C_{12.6}H_{26.2})Cl$; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12}) —min. 85.0%.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Phosgene (Carbonylchloride) $COCl_2$; 98.9	Colorless gas at ordinary temperatures. Does not discolor a 0.1% solution of KI when vigorously bubbled through solution for one minute. (Test for free chlorine).	Dye intermediate; Chlorinating agent.
Sodium Sulfhydrate NaSH; 56.1	NaSH 70 to 72%. Na_2S 1 to 2%. NaCl, max. 1%. Na_2SO_3, $NaHCO_3$, max. 1%. Fe, max. 5 ppm. Cu, Ni, Cr, Mn, Pb, max. 1 ppm. Water of crystallization 28 to 26%.	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S 60 to 62%. NaCl, max. 1.5%. Other Na Salts, max. 2.0%. Fe, max. 15 ppm. Cu, Ni, Cr, Mn, Pb, max. 1 ppm. Water of crystallization 36.5 to 34%.	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER CHEMICALS

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HOOKER ELECTROCHEMICAL COMPANY

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Chlorine
Caustic Soda
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MORE EFFICIENT FLUORESCENT LIGHTING WITH . . .

Since the G-E Watch Dog Fluorescent Starters were first introduced, more and more people have switched to them each year. These manual reset starters continue to operate efficiently and economically after several years' service. G-E Watch Dogs are used with 15-, 20-, 30-, 40-, and 100-watt lamps in commercial and industrial lighting fixtures.

There are many reasons why workers, lighting engineers and maintenance men prefer G-E. Here are some of the more important ones.

Users like the Watch Dog Starter because it stops annoying blink once and for all.
Lighting Engineers specify G-E Watch Dogs because they outlast five ordinary starters.
It's a Watch Dog for maintenance men every time. To relamp, just reset it . . . forget it.

Get the whole story about G-E Watch Dog Starters by writing to Section G-1252-109, Appliance and Merchandise Dept., General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

FREE FOR THE ASKING

plants, are described in an 8-page booklet published by Caterpillar Tractor Co.. Actual uses of the Towmotor are shown.

17. Removing minerals from water by a process of ion exchange is the subject of Bulletin 4181 released by Cochrane Corp. The process is said to prepare clear water which is the equivalent of commercially distilled water.

18. Stainless steel composition which makes the metal applicable for a variety of uses is given in an 8-page booklet issued by Jessop Steel Co. The characteristics of each type made by the company and the uses to which they can be put are described.

19. Electronic control for motors which permits any speed variation desired is discussed in "Electronic Motor Controls," published by Electron Equipment Corp. Several models of the control are illustrated.

20. Rubber linings for pipes, fittings, valves, etc. for handling corrosive acids are described in "Plioweld Rubber Lining," published by the Goodyear Tire & Rubber Co., Inc. Synthetic rubber is used for the lining.

21. Hand tachometers which record speeds between 30 and 48,000 r.p.m. are the subject of Bulletin No. 750 made available by Herman H. Sticht Co., Inc. The four models, each of which covers a portion of the range above, have 3-in. dials.

22. An external-bearing pump, designed with anti-friction rust and line bearings, is described in literature released by the Quimby Pump Co. It is said that the new construction can be provided on all existing pumps.

23. Knives specially made for particular cutting jobs are described in a leaflet issued by Taylor-Stiles & Co. Specifications for ordering knives are listed.

24. Engineering service in process development, plant design, etc. is described in a folder distributed by Foster D. Snell, Inc. A complete list of the services rendered by the company is given.

25. How nylon is made is described and illustrated in an article appearing in *The Burrell*, published by the Burrell Technical Supply Co. The processes are followed from the manufacture of the nylon salt to the spinning of the filaments.

26. A hand tachometer which measures revolving shafts as close as one r.p.m. is described in literature released by George Scherr Co. It is stated that the precision of the instrument arises from the fact that the dial is individually calibrated for each instrument.

27. "The Resistance of Nickel and Its Alloys to Corrosion by Caustic Alkalies," in a newly revised form, is being distributed by the International Nickel Co. Corrosion data of interest to plants using caustic compounds are given.

PASTE IT ON A POSTCARD

This mailing coupon is a convenient size to paste on a penny postcard. ***Circle the numbers of the catalogs you want*** *which correspond to the numbers on the descriptive paragraphs. Fill out the coupon* ***legibly*** *and* ***completely.*** *Paste it on a postcard, or put it in an envelope if you prefer, and mail it to TEXTILE WORLD, 330 W. 42nd St., New York 18, N. Y.*

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330 West 42nd St., New York 18, N. Y.

I have circled below the catalogs I want, as listed in your December, 1945, "Free for the Asking."

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My Name ..... Title .....
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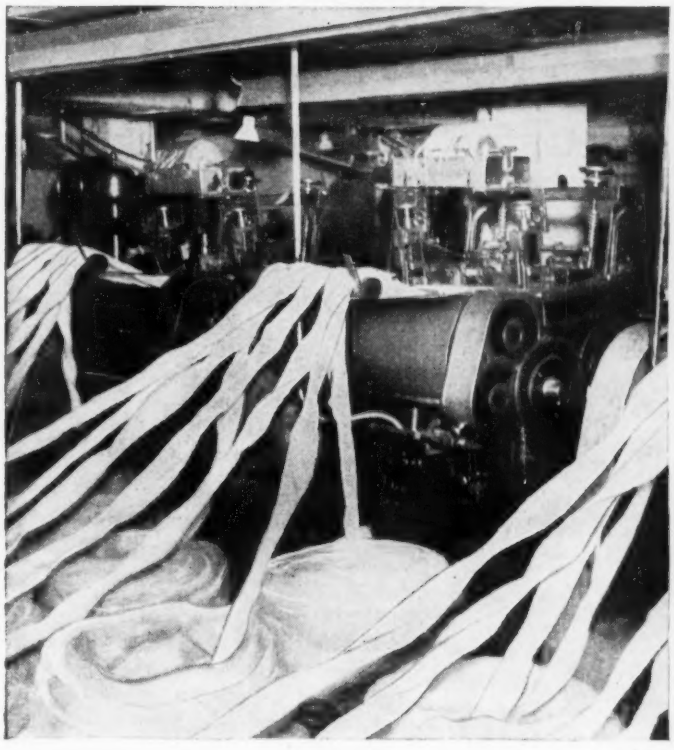
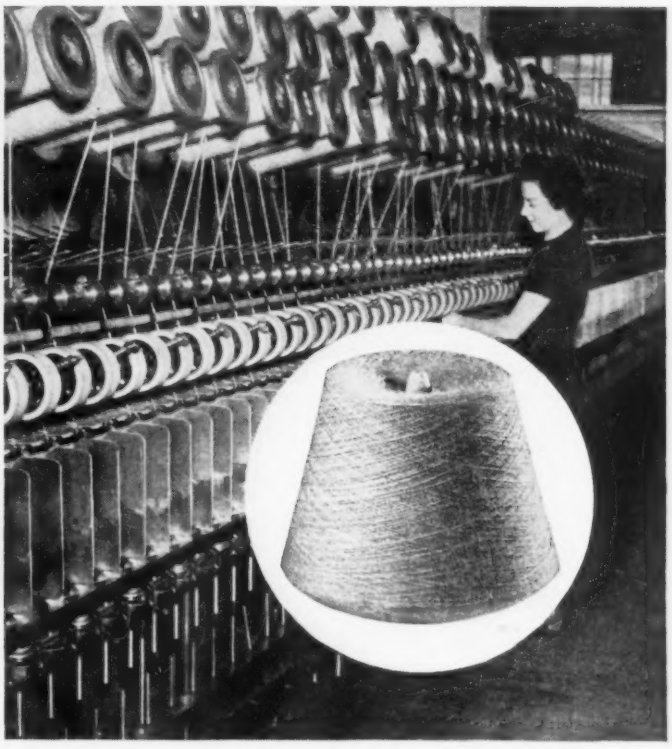
From Gill Box to SPINNING ROOM





Photographs courtesy Caron Spinning Co., Manufacturers of "Korspun"

100% Saponifiable NOPCO CP SOLUBLE helps make top quality yarn

NOPCO CP SOLUBLE combines those properties so necessary for effective—efficient—and economical production through all stages of yarn manufacture. Because this low viscosity oil is easily and thoroughly dispersed in emulsion, it assures uniform lubrication—minimizes fiber breakage—acts as a binder to prevent fly and waste in combing, drafting, and spinning for greater economy. Being 100% saponifiable, Nopco CP Soluble goes far in saving soap costs and labor in scouring time.

OTHER ADVANTAGES! NOPCO CP SOLUBLE imparts a drag equal to that of Olive Oil. Reduces static. Residual oil content usually well under .5%, thus permitting level dyeing and brilliant clear-toned shades. Safe for top, yarn or goods in grey storage and resin finishes for shrinkproofing. Resists oxidation. Leaves no rancid odor in finished goods. Write for more complete information.

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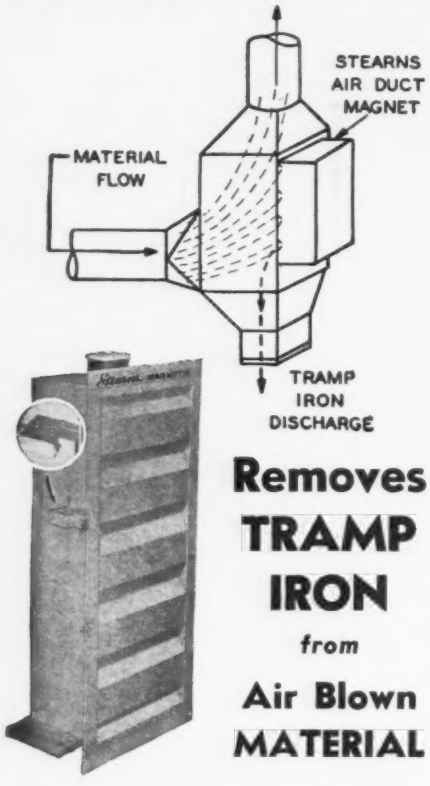

Removes TRAMP IRON *from* **Air Blown MATERIAL**

If you are bothered with tramp iron or metallic refuse in air blown material such as cotton, wool, shoddy, etc., investigate the merits of this thoroughly tried Stearns Air Duct Magnet. An efficient strong, automatic piece of magnetic equipment designed by a pioneer magnetic engineering firm. Automatic Switch control, see circle.

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News of the month

Knitting Exposition Off Till 1947. National Association of Hosiery Manufacturers will hold its annual convention and Hosiery Industry Conference at Claridge Hotel, Atlantic City, N. J., in the week of April 29, 1946. The association has cancelled the Knitting Arts Exhibition tentatively set for the coming spring and fixed it for the spring of 1947. This postponement was due to exhibitors having little available to show or to sell, and to conflict with the Southern Textile Exposition.

Demands of Labor. The conference between the Textile Workers Union of America (CIO) and a group of wool textile mills held in Boston Dec. 6 adjourned without agreement. Union demands were for a 75¢ an hour minimum, 15¢ an hour wage increase for all workers, union shop, group insurance paid by the mills, two weeks' vacation with pay, second-shift premium of 4¢ an hour, time and one-half for Saturday, and double time for Sunday. The mills were agreeable to providing the insurance, vacation, second-shift premiums, and Saturday and Sunday pay premiums. The union would not accept the mills' offer to increase wages 10¢ an hour, equivalent to $4.00 for a 40-hour week, unless the mills as a group agreed to a preferential union shop in which all new workers must join the union. The offer of increased wages, if accepted, would have resulted in average hourly rates, adjusted to eliminate overtime, 64% above average wage payments in January, 1945.

Textron in Old Tiffany Building. Textron, Inc., Royal Little, president, has leased the old Tiffany building at Fifth Ave. and 37th St., New York, for a term of 10 years. Textron's administrative headquarters are in Providence, R. I., with mills located in many New England towns. Its present sales headquarters are in the Empire State building, New York, where the complete line of lingerie, negligee, men's wear, shower curtains, draperies, and bedspreads is displayed. The Tiffany building will be occupied by Textron about May 1 of next year and will be known as the Textron building. In addition to the sales offices and showrooms this structure will house the exporting, converting, and fabric development departments. Textron has set sales goals at $100,000,000 by 1947 against the current rate of about $60,000,000.

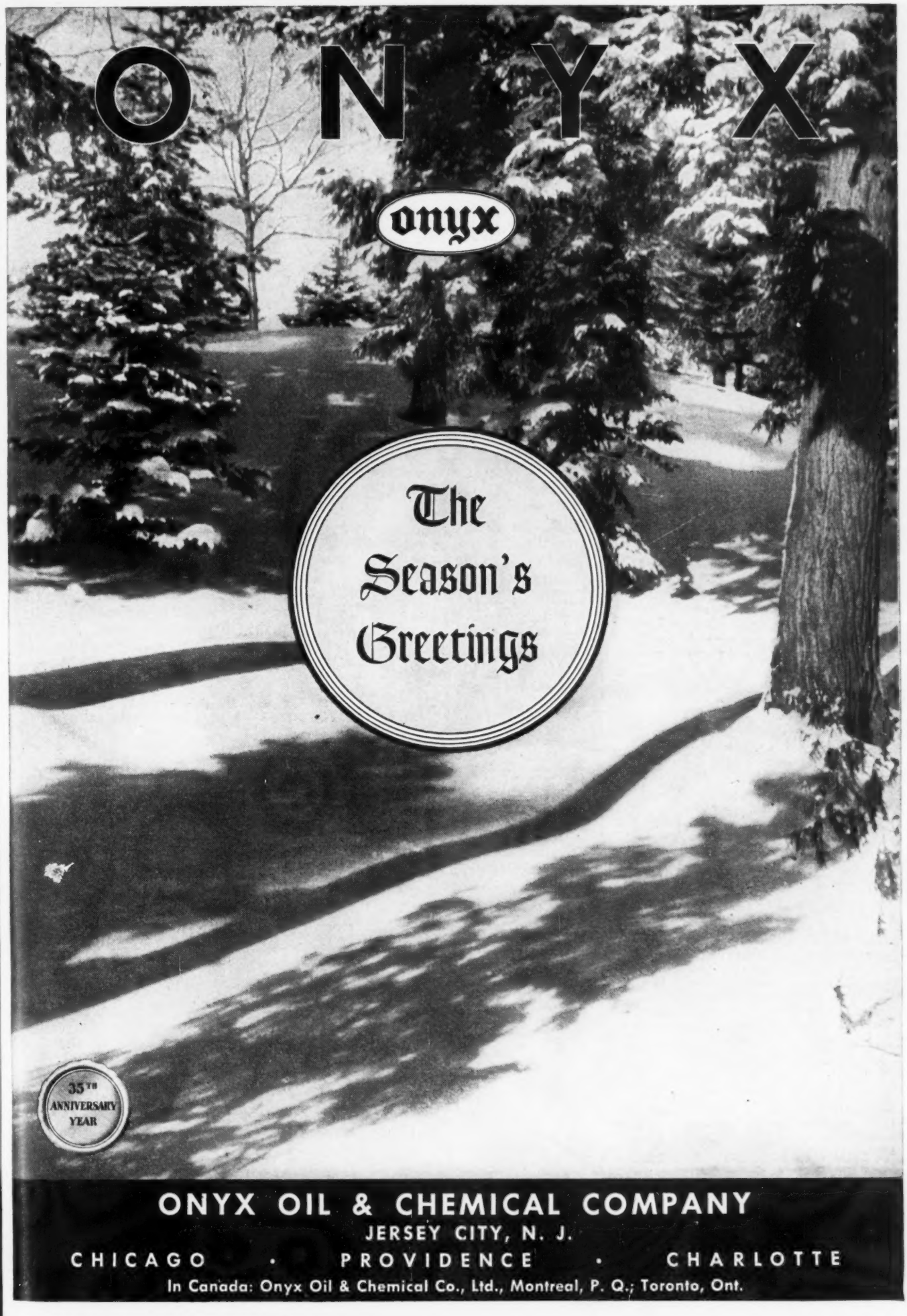
WPB Now CPA. The Textile, Clothing, & Leather Division of the Civilian Production Administration, successor to the recently-dissolved War Production Board, is now under the directorship of Herbert Rose, who succeeds Kenneth W. Marriner, resigned. Its principal tasks, according to Mr. Rose are: Supervision of production and distribution of textile fabrics for the government's low-cost clothing programs and also fulfillment of continuing military requirements; increasing total production of textiles; allocation of imported materials that are still in short supply, such as manila for rope and burlap for agricultural bags.

ACMA Warns on Low-Wage Imports. The board of governors of the American Cotton Manufacturers Association has authorized a special committee to confer with Washington authorities regarding the problem of operating the textile industry in conquered countries. The association is particularly concerned over Japan, and the committee will seek to protect American workers from the low wages of Jap workers and to establish textile independence in this country.

Domestic Wool Prices Cut 12 to 15% The wool market attracted numerous inquiries in the last week of November when new offering prices were set on domestic wools giving a reduction of 12 to 15%, or 5 to 7¢ per lb. in the grease. Territory wool, formerly appraised at $1.20, was reduced to $1.05 clean; three-eighths blood, appraised at $1.07 to $1.09, was reduced to 95¢. The volume of sales was not, however,

General Alphabetical Index to TEXTILE WORLD

THE ANNUAL INDEX to the 12 issues of TEXTILE WORLD issued in the calendar year of 1945 is now in course of preparation. Copies will be mailed to any subscriber who will write to us requesting same. Address TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.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The Season's Greetings
35TH ANNIVERSARY YEAR
ONYX OIL & CHEMICAL COMPANY
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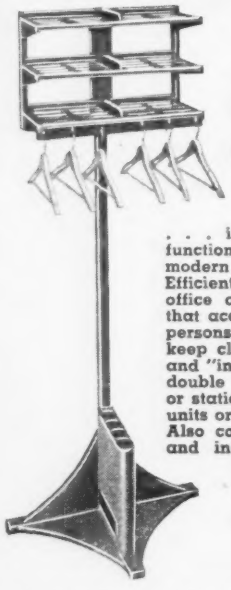

Now Available in STEEL!

. . . in new post-war function designs and modern finishes. Efficient space-saving office and factory units that accommodate 3 or 4 persons per sq. ft., that keep clothing dry, aired and "in press". Single or double faced. Portable or stationary in standard units or by the foot to fit. Also complete industrial and institutional checkrooms.

Write for Bulletin No. G21

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"The Checkroom People"
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It's as simple as that—you can start now to put your postwar plans into effect. Technological advancement of our postwar machines has been revolutionary. Increased production, superior throwing and reduced up-keep because of new materials of construction and ultra engineering design. Act now. *Consider these Products.*

- **U. S. ACME TWISTERS for spool or headless package**
- **U. S. JUMBO FACE DRIVE TWISTERS for large headless package work**
- **U. S. ACME DOUBLER TWISTERS, large package**
- **U. S. REDRAWS and SPOILERS**

U. S. TEXTILE MACHINE CO.
SCRANTON 9, PENNSYLVANIA, U. S. A.

very great as further cuts were expected. Arthur Besse, president of National Association of Wool Manufacturers, in appearing before the Special Senate Wool Committee recently stated his approval of a subsidy plan for the American wool grower, but he opposed the Hill plan as "artificially raising the price of farm products."

OPA Sets Nylon Hosiery Prices. A new nylon hosiery price order was issued last month by OPA. Beyond detail on definition and procedure, it sets up a schedule of prices for all classes of hosiery and in most cases gives three retail prices for (1) chain and mail order, (2) unbranded lines bought from manufacturer, and (3) branded, bought from wholesaler, or house to house. On the 51-gage, all-nylon, full-fashioned stocking these prices are $1.35, $1.45, and $1.55 respectively. The all-nylon, 400-needle, circular stocking is set at $1.15 to $1.35 retail.

N. C. Men Meet. The thirty-ninth annual convention of the North Carolina Cotton Manufacturers Association was held Nov. 9 at Hotel Charlotte, Charlotte, N. C. J. A. Moore, of Edenton, presided, and the program featured addresses by Robert M. Hanes, Winston-Salem banker; Ralph E. Loper, industrial engineer, Fall River, Mass.; and J. Melville Broughton, former governor of North Carolina. The convention elected R. L. Harris, of Roxboro, as president for the coming year; R. D. Hall, of Belmont, first vice president; Hearne Swink, of Kannapolis, second vice president; and Hunter Marshall, of Charlotte, secretary-treasurer.

New Everfast Lines. In a presentation dedicated to a peacetime theme, "Have Fun," Everfast Fabrics staged a style show at the Waldorf-Astoria Hotel, New York, recently, involving 60 different costumes by 28 leading American designers. A feature of the showing was the use of Everfast ginghams, piques, chambrays, poplins, Erin, and Crashmere for the sort of clothes usually made only of crepe.

Group Meeting of Wool Manufacturers. Lt. Col. Stephen J. Kennedy, of the Research & Development Branch of the Army Quartermaster Corps, addressed a group of the National Association of Wool Manufacturers at the Commodore Hotel, New York, recently on the peacetime application of wartime developments to woolen and worsteds.

New Association Hears Dr. Larrick. The importance of research and fabric engineering in the future of the textile

VIRGINIA JEWEL, fashion director of the Cotton-Textile Institute and National Cotton Council, in her newly-decorated office in New York, done in cotton fabrics, with cotton rug and with cotton-backed leatherette for upholstery, table covering, etc.

VICTORY CLOTHING COLLECTION
For Overseas Relief

Continuing Need for Clothing for Overseas Relief

BY CHRISTMAS approximately 25,000,000 men, women, and children in the liberated countries overseas will have received clothing donated by the American people in the United National Clothing Collection of last spring. But 25,000,000 is only a small percentage of the destitute, homeless, and looted people of Europe, the Philippines and the Far East. Devastation and want in those lands are on so vast a scale that millions there are even now inadequately clad for winter weather, for health, and for self-respect. A further drive for used garments will be instituted in January, support for which is being sought all over the country. In particular are wanted underclothing, work clothes, bedding, and shoes.

V for Victory over machine-control limitations

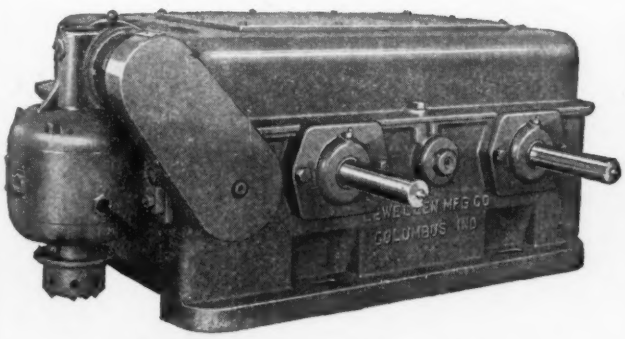
Look to LEWELLEN *Automatic* CONTROLS and Variable-Speed Transmissions

★ *Any* desired automatic changes in machine operation may be accomplished when Lewellen Automatic Electrical Control is used with a Lewellen Variable-Speed Transmission.

The accuracy of controlling speeds with a Lewellen Variable-Speed Transmission is a big factor in the universal success of Lewellen Automatic Controls. Yes, you may synchronize one operation with another, vary speeds to compensate for changes in condition of materials and methods of processing, etc.

Lewellen Automatic Controls are not stock items—they are special in all cases, designed to meet the particular problem at hand. Let us apply our experience—more than 45 years of it—in solving your problem. Let us show you the advantage of speed control AT ITS BEST!

Control Station



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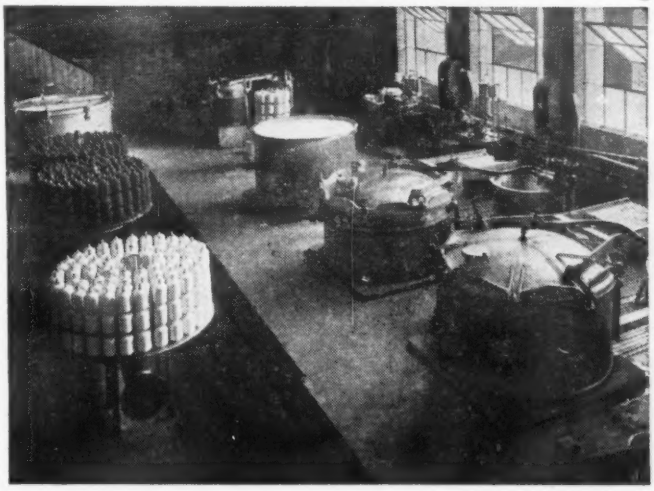
IN BETTER PLANTS EVERYWHERE



Package Dyeing Installation, Extracting and Drying in a complete cycle on the same material carrier

Builders of Cotton & Wool Dyeing Machines

Stainless Steel Construction

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CONES • RAWSTOCK • SKEINS

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CENTRIFUGAL EXTRACTORS AND DRIERS

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RAYON CAKE DYEING MACHINES

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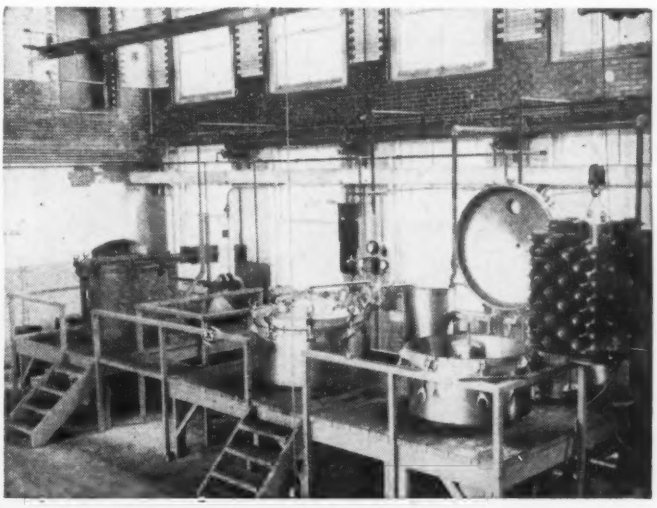
DYE SPINDLES AND PERFORATED TUBES



Model KRAG package dyeing installation with closed pressure extractor in complete cycle on the same material carrier

Standard Fabricators

INCORPORATED

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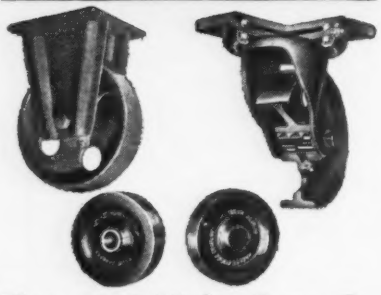
MATERIALS HANDLING
EQUIPMENT

LOAD-MOVERS
SEND FOR LOAD-MOVER
MANUAL No. 1001MH



Since 1897 Market Forge Co. has produced casters as integral parts of their industrial trucks. Continued improvements have resulted in the most durable and efficient caster it is possible to produce. Load-Movers assure standardization of running gear on truck fleets.

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REEL CAPS

Hard Chromium-Plated Steel Reel Caps, made in sizes to fit your bobbin heads. *Write for quotation.*

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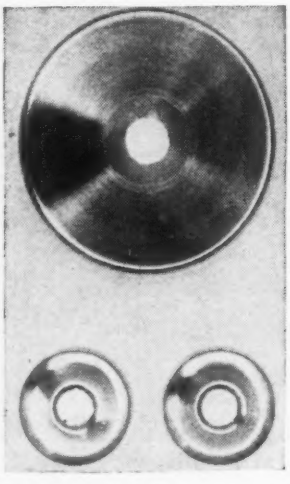
MANUFACTURING CO.
Textile Mill Supplies
HONESDALE, PENNSYLVANIA



TENSION-DISC

Made of hardened steel, hard Chromium plated to resist wear and corrosion. Fit Universal Tension Bracket. *Write for quotation.*

industry was discussed by Dr. Lewis Larrick of the Institute of Textile Technology, Charlottesville, Va., at a dinner Nov. 13 in Albermarle Hotel, Winchester, Va., in connection with the quarterly meeting of the Shenandoah Valley Textile Executive Association. This association was formed last May, its president John H. Fisher, of Virginia Woolen Co.

Plastics Show. First National Plastics Show is to be held in the Grand Central Palace, New York, from April 22 to 27, 1946. The industry as a whole will exhibit raw materials, machinery, and end products.

PTI Alumni. The alumni dinner of Philadelphia Textile Institute, held at the Hotel Roosevelt, New York, Dec. 14, marked the beginning of a new era in the history of the institute and its further development. A report of the current building-fund campaign was presented.

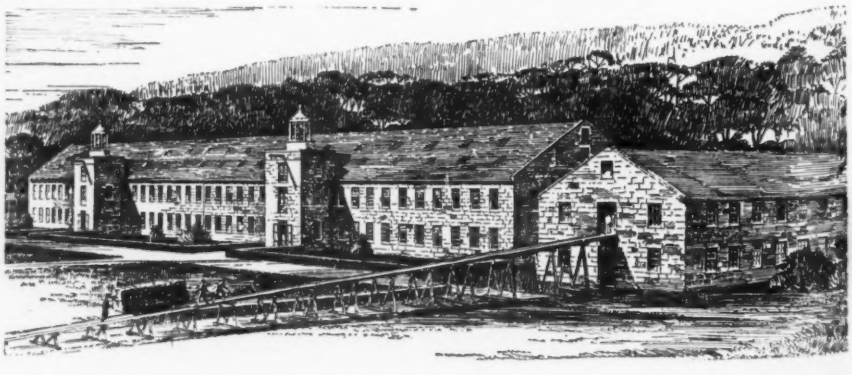
Chemical Show. Exhibitors are preparing for the 20th Exposition of Chemical Industries, to be held in Grand Central Palace, New York, Feb. 25 to Mar. 2, 1946. Over 300 exhibitors who showed at the last chemical exposition in the Palace, in 1941, are on the new roster, which, with additional entries, promises to top the old one by a considerable margin.

Tubize to Merge with Celanese. The directors of Celanese Corp. of America and of Tubize Rayon Corp. on Nov. 30, signed agreement of a merger of Tubize with and into the Celanese Corp. by an exchange of stock. It is proposed that each outstanding share of Tubize 4¾% preferred shall be converted into one share of first preferred stock, $4.75 series, of Celanese; and that each outstanding share of Tubize common shall be converted into ⅓ of a share of Celanese common. Meetings of shareholders to act on proposed merger will be held next month.

Olney Medal Goes to Milton Harris. At the Victory Convention of the American Association of Textile Chemists & Colorists, to be held in New York, Jan. 3 to 5, the annual intersectional contest will be featured, together with an open meeting of the research committee, and the annual banquet. The Olney Medal will be presented to Dr. Milton Harris for outstanding achievement in the field of textile chemistry.

Burlington Foundation. The Burlington Mills Corp., Greensboro, N. C., has established The Burlington Foundation, a trust set up as an educational loan fund to assist in providing a means of higher education for employees of the corporation and members of their families. Set up with an initial allocation of $250,000, the fund will loan amounts not exceeding $500 per year for a maximum of six years to each individual, and the program will provide loans for both undergraduate and graduate instruction. Students will not be charged interest, and the fund is not limited to those planning to enter the textile field.

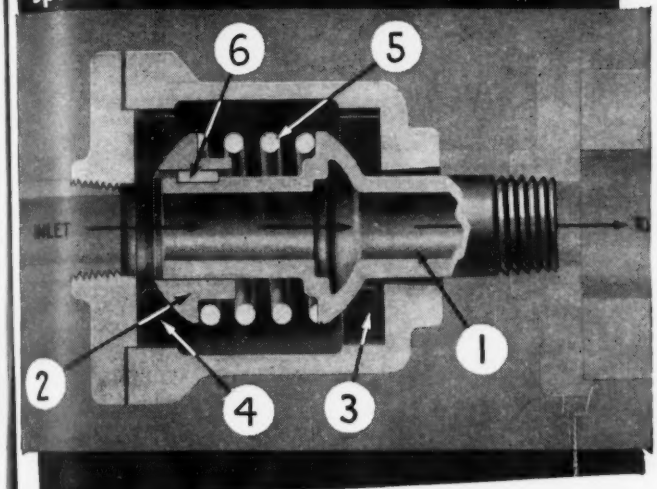
Foresees Great Increase in Synthetics. Rapid expansion of the American rayon industry in postwar years, with probably 1,500,000,000 lb. annual output by 1955 was predicted by W. C. Appleton, president of American Viscose Corp., Wilmington, Del., when he addressed a foremen's dinner at Meadville, Pa., recently. He discussed the possibility of Viscose's entry into the plastic field, saying: "I don't believe we would confine our activities to rayon yarns alone."



THE GRANITEVILLE CO., Graniteville, S. C., observes its 100th anniversary on Dec. 15. Above is shown the mill as built by William Gregg in 1846. Mr. Gregg served as president until his death in 1867. He was succeeded in turn by H. H. Hickman, Tracy I. Hickman, S. A. Fortson, Jacob Phinizy, Leavelle McCampbell, Lanier Branson, and Samuel H. Swint, who was elected in 1939 and is currently president. The company now operates seven plants with 171,140 spindles, 4,023 looms, and nearly 5,000 operatives.

4 Good Reasons Why JOHNSON ROTARY JOINTS

Speed Up Production and Cut Down Maintenance



1 **COMPLETELY PACKLESS.** Rotating member consists of nipple (1) and sliding collar (2), keyed together (6). Seal is accomplished by carbon graphite seal ring (3), forced by pressure tightly against nipple. Positive seal—no stuffing boxes or steam fits to repack. Carbon graphite ring (4) serves as bearing.

2 **SELF-OILING.** Seal ring (3) and bearing ring (4) are of long-lived carbon graphite—require no lubrication. Your maintenance man will go for this in a big way.

3 **SELF-ADJUSTING.** Spring (5) is for initial seating only. Joint in operation is pressure sealed; the higher the pressure, the tighter the seal, as it should be. No lost time due to repacking or repairing because of misalignment.

4 **SELF-ALIGNING.** Ball and socket joints between rotating member and rings compensates for angular misalignment of pipe. Space between nipple and housing provides for lateral misalignment.

● Yes, Johnson Rotary Pressure Joints end all the troubles of the old style stuffing boxes and steam fits, In addition, they provide a simple way to install more efficient methods of syphon drainage. And—very important—is the fact that Johnson Joints can pay their own way out of savings in maintenance alone.

WRITE FOR COMPLETE INFORMATION

The Johnson Corporation

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Make Your Compressed Air Come Clean

with the Johnson Separator. Employs the two best principles of separation—expansion and change of direction; removes 99% plus of trouble-causing water, dirt and oil from compressed air. Simple design and construction insures long life. Also available for service on steam lines.

Write for Bulletin on Johnson Separation Devices

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Textile Industry

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- Drying
- Curing
- Carbonizing
- Singeing

PRODUCING

- GREATER SPEED
- GREATER ACCURACY OF CONTROL
- INCREASED PRODUCTION
- GREATER UNIFORMITY
- FREE FROM TORCHING

Our Engineering Department will gladly show you how Carbomatic will improve your production without any obligation.

All equipment guaranteed and in conformity with insurance companies' requirements.

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Use our laboratories for your tests. There's no obligation. Or, if you prefer, a trained Pabst field man will gladly work with you in your own mill. Write for our free booklet.

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CHICAGO, ILLINOIS
Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

NEWS ABOUT *Suppliers*

The 15th Southern Textile Exposition to be held the week of April 8 in Textile Hall, Greenville, S. C., will be one of the largest in its history. More applications have been received than for any previous textile show. Practically all of the manufacturers of machinery, equipment, accessories, supplies, primary and fabricating materials and parts who participated in the last show, held in 1941, will be represented. Some of the manufacturers of spinning and weaving equipment will not be able to have in operation new machines which they are now perfecting, but officers and factory representatives will be present in their booths to meet customers and explain their current plans and improvements. A number of advanced and modern types of equipment will be on display. To help in solving transportation problems, exhibitors may install exhibits any time after March 1.

Sipp-Eastwood Corp., Paterson, N. J., has announced the resignation for reasons of health of Charles A. Paterson, who has been associated with the sales staff of the company for over 20 years. Otto C. Biegel of the Warp Twisting-In Division will cover Mr. Paterson's territory in Pennsylvania and New Jersey. S. Fred Toll has established a Southern office for the company located temporarily at 2128 Green St., Charlotte, N. C., until permanent quarters can be located.

Curtiss-Wright Corp., New York, has acquired the **Marquette Metal Products Co.**, Cleveland, Ohio, manufacturers of precision parts and assemblies. Herbert Gleitz will continue as president and general manager of the Marquette firm and G. W. Vaughan, president of Curtiss-Wright, will assume the newly-created position of chairman of the board. Among the Marquette company's more recent developments is a roller-bearing spindle for the textile industry. This spindle incorporates self-centering features and frictionless characteristics which are said to reduce yarn breakage and provide a substantial saving of power. Other products include Diesel engine governors, fuel injectors for internal cumbustion engines, compressors, etc.

COL. J. EBERT BUTTERWORTH, who returned to duty with H. W. Butterworth & Sons Co., Philadelphia, on Nov. 5, after 4½ years of Army service. He served in North Africa and in Italy. At the time of his discharge, he was Chief of the Economics & Supply Division of the G-5 Section (Civil Affairs), Allied Force Headquarters, Mediterranean Theatre of Operations. Colonel Butterworh is also a veteran of World War I. He will play an important role in the post-war development of H. W. Butterworth & Sons Co.

Calco Chemical Division, of American Cyanamid Co., Bound Brook, N. J., has broken ground for the first units of the new research and technical sales service center. The center, when completed, will also include the general administration offices of the company. The application and technical sales service laboratory units will be ready for occupancy by early summer, 1946. It will contain the pigment, paper, and textile resin sections of the application laboratory and the technical sales offices for this group.

Parks - Cramer Co., Fitchburg, Mass., has appointed William B. Granger to succeed Walter H. Burnham, sales representative in the South Carolina territory for many years.

New Portable INFRARED UNITS

For Baking - Drying Dehydrating - Preheating

FOSTORIA
Evenray
Model 62-247
Other models available with radiation coverage up to 2000 sq. in.

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MOVE ANYWHERE
TILT IN ANY DIRECTION
PLUG IN AND TURN ON

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Ideal for Multiple Heating Operations in Shop, Laboratory and Service Departments

Use this new high efficiency production tool for baking lacquer, enamel and other finishes; drying latex, glue, ink, sand moulds etc.; preheating plastics, metal fittings, glass, oil, etc.; dehydrating textiles, chemicals, clay, etc. You'll do it faster, better, more conveniently with Infrared.

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A GOOD WATER-REPELLENT

★ There are *distinct advantages* in using TRUKON. Fabrics treated with TRUKON are made uniformly water-repellent, spot and perspiration-resistant and wear-resistant. It has excellent penetrating power and provides uniform distribution during application. TRUKON is miscible in cold water — it is simple and easy to use — requires no special equipment . . . Postwar consumer demand will extend the application of water repellents to a great variety of fabrics. All the aids-to-selling that this implies are obtained in full measure by using TRUKON.

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HART PRODUCTS

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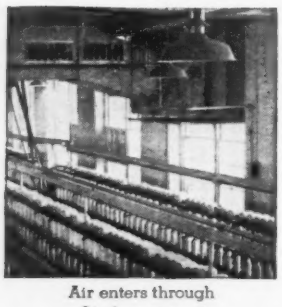
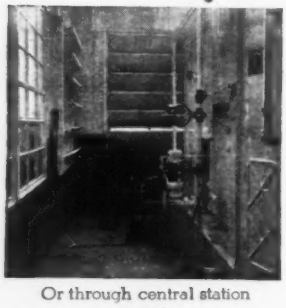
THE COUNTRY OVER, IT RAINS ONE DAY OUT OF THREE

VITAL HELP
for old Spinning Rooms and Weave Rooms



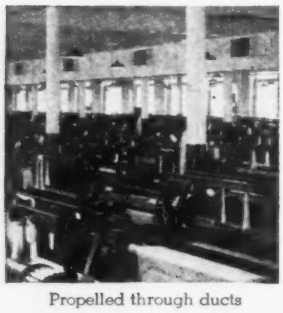
Air enters through Airchanger unit

Regain higher and more dependable. Greater strength and more uniformity in numbers.



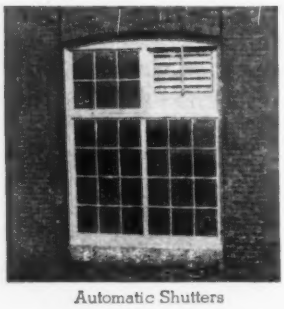
Or through central station air washer

Drafting of Fibers smoother and more compact. Waste and fly reduced to a remarkable degree.



Propelled through ducts

Fewer Breaks. Not as many stops or piecings. Not as many adjustments. Cleaner and very much more comfortable rooms.



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Better Product. And very often as much as 2% more production.

Certified CLIMATE with its exclusive method of control has been known to PAY FOR ITSELF in a year, or less.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

who has resigned. Mr. Granger has been in the engineering department of Marshall Field & Co., Spray, N. C., and in charge of plant survey engineering at Riverside & Dan River Cotton Mills, Danville, Va.

Crompton & Knowles Loom Works, Worcester, Mass., have started work on a new dry kiln building, one-story, 28x73 ft., of brick masonry construction estimated to cost $17,000.

John A. McPherson & Co., Greenville, S. C.—G. Bruce McPherson, has been released from the Navy, and has returned to the John A. McPherson Co., of which he is a member of the firm. He was lieutenant in the 8th Special Naval Construction Battalion and served as executive officer. He served thirty months in the Aleutians and on the West Coast.

J. L. GRAVES, who is now permanently located in the Boston office of Saco-Lowell Shops as sales manager in charge of domestic sales. The company's Southern offices and Biddeford Shops are under the direction of Mr. Graves in all matters pertaining to sales. H. M. Walsh will assume Mr. Graves' former sales contacts in the Atlanta territory, under the direction of Mr. Gayle.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed J. L. Singleton as manager for its 60 district offices. Assistant manager of the steam turbine department prior to this appointment, Mr. Singleton joined Allis-Chalmers in 1926.

Draper Corp., Hopedale, Mass., has purchased a five-passenger twin-engine airplane for the use of plant executives.

Henry Riehl & Son, Philadelphia, Pa., have purchased the one and three-story industrial buildings at 4353 Orchard St., Philadelphia, 66x311 ft., for $46,000, and will move from their present plant to this location to provide for increased facilities.

Arnold Hoffman & Co., Inc., Providence, R. I., have appointed Leonard G. Tubbs as northern sales manager. Mr. Tubbs will make his headquarters in the New York office of the company at 350 Fifth Ave., where he has been located for some years.

Schmidt Mfg. Co., New Bedford, Mass.—Clayton E. Schmidt, sales manager of this firm, has been discharged after four years in the army. He held rank of staff sargeant.

E. I. du Pont de Nemours & Co. on Nov. 15 officially stated that recurring reports from Germany giving the impression that the Du Pont company is a substantial stock holder in I. G. Farben-industrie are entirely incorrect. "The Du Pont company" the statement read, "has no investment whatever in I. G., or any of its subsidiaries." Du Pont has named Maurice du Pont Lee, manager of the Rayon Technical Division since 1932 and a pioneer in the development of Du Pont's interests in dyes and synthetic fibers, to be general consultant in the Engineering Department. Mr. Lee joined the old Du Pont Fibersilk Co. in 1920, the year of its organization.

Textile Chemical Division of the Dexter Chemical Corp., New York, has been organized with Joseph B. Evans as director of sales and Sidney M. Edelstein as technical director. The division will handle "Kopan," a permanent cellulose finish, and "Dypenol," a mercerizing penetrant, among other chemicals. Mr. Edelstein has been with Hart Products Corp. as director of research. Mr. Evans is connected with the Celludye Corp., and, after the first of the year, the Celludye pigments will be distributed exclusively by the Dexter corporation.

Standard - Coosa - Thatcher Co., Chattanooga, mercerized cotton yarns and threads, has moved from the Lafayette Building at Fifth and Chestnut

Hubbard Warp Beams are designed from start to finish to cut operating costs. Every detail of construction has been engineered to increase operating efficiency.

Hubbard Warp Beams provide the advantages of . . .

- Strength and light weight through the use of high grade magnesium alloys.
- Long beam life because of rigid construction. Steel liners in heads for yarn shaft, protect beams, assure true beam operation.
- Easier handling, smoother operation.

Hubbard has the knowledge and engineering background to help lower your costs in bobbins, beams, and related products. Write us today for complete information.

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Strong, non-corroding, stain-proof. Will be available as soon as priority controls permit.

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This warp-proof, break-proof and split-proof bobbin withstands the terrific strains of even the severest kind of service.

High Speed Loom Beam and Warper Beam Heads

These balanced veneer plywood replacement beam heads are stronger, longer-lasting than other types.

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MAINTAIN SMOOTH PRODUCTION FLOW — IMPROVE HOSIERY QUALITY

- **LAUREL Coning Oil #443 for better conditioning**
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- **LAUREZOL #6 for level shades**
- **LAUREL Peramel for fine appearance, lasting finish**

THESE five LAUREL NYLON Hosiery Processing Agents will save precious processing time; help you maintain smooth production flow; enable you to build up adequate stocks for your share of the tremendous demand back of "eleven pairs for every American woman."

In Laurel NYLON Hosiery Processing Agents, you have a hard-to-beat combination: 1. an excellent conditioner which makes for better knitting; 2. an effective lubricator which prevents sticking in pre-boarding operation; 3. a thorough scour which leaves hosiery clean, ready for dyebath; 4. an active dispersing agent which has greater penetration, produces level shades; 5. a lasting finish which adds to the beauty and appeal of your hosiery.

Tested and successfully used, pre-war, by well-known mills and dyehouses, Laurel NYLON Hosiery Processing Agents will give you a head start. These time-saving, quality-producing agents are available now . . . Laurel technicians will be glad to make recommendations for your particular job. Phone, wire or write today for trial order and directions for use.

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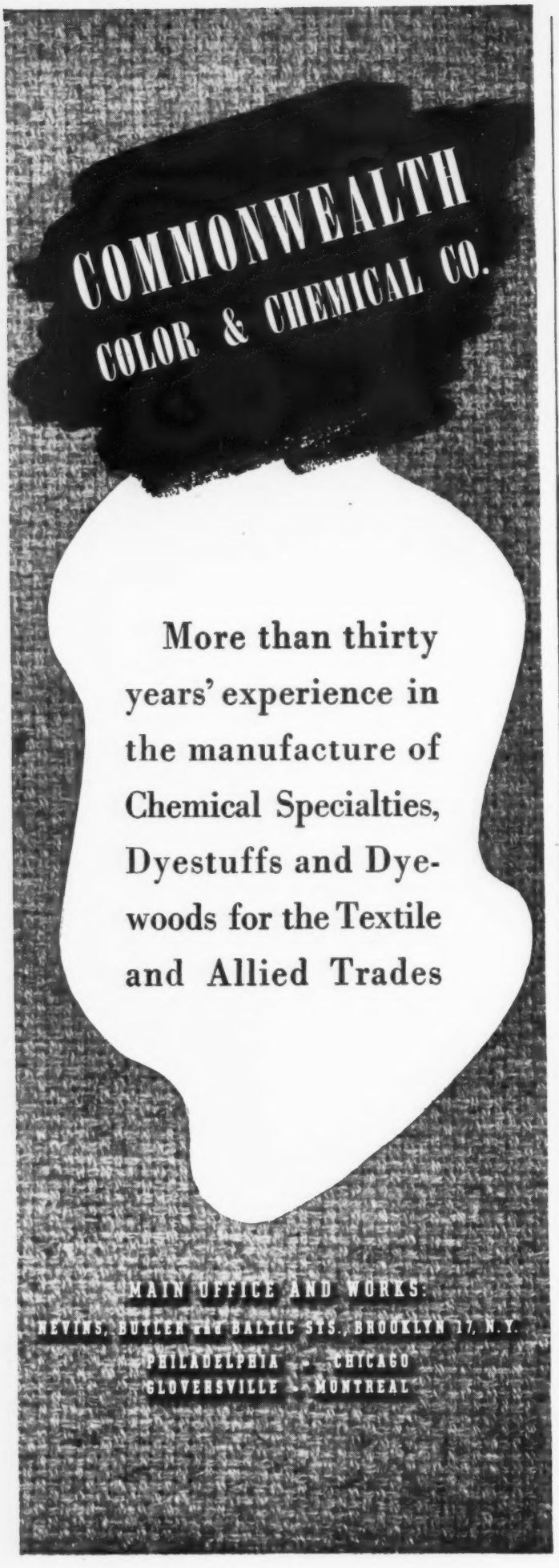
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More than thirty years' experience in the manufacture of Chemical Specialties, Dyestuffs and Dyewoods for the Textile and Allied Trades
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NEWS ABOUT SUPPLIERS

Johnson Chemical Co., Charlotte, N. C., has begun the construction of a $20,000 plant and office building which will greatly enlarge present manufacturing facilities. The firm, which manufactures textile chemicals, now is located at 1225 Statesville Ave. but expects to move to a new location at the corner of Moretz and Lucena Ave., about the first of the year. Stephen Hawes is general manager.

Grasselli Department of E. I. du Pont de Nemours & Co., Inc., has been authorized to option land in Chesterfield county, near Richmond, Va., with the view of building a small sulphuric acid plant to supply acid for Du Pont rayon operations.

National Ring Traveler Co., Pawtucket, R. I., has added J. Fred Sumner of Mount Holly, N. C., to its staff as sales engineer. He will operate out of the Charlotte office, chiefly in North Carolina.

Watson & Hart, Greensboro, N. C., is a newly formed partnership with offices at 216 West Market St., which offers engineering service for industry. John D. Watson, senior partner was until recently chief engineer for J. A. Jones Construction Co. of Charlotte. James E. Hart was assistant general superintendent for Comstock-Bryant Electric Co., of High Point.

Milton Harris Associates, Washington, D. C., have added Dr. Anthony M. Schwartz to their staff. He was formerly director of research of the Alrose Chemical Co., Providence, R. I., and prior to that with Visking Corp., Chicago, Ill., and National Aniline Division of Allied Chemical & Dye Corp., Buffalo, N. Y. Milton Harris Associates have acquired an additional 3000 sq. ft. of floor space at their present location, 1246 Taylor St., N. W., to be used for expansion of the chemical laboratories and for the addition of small scale equipment for experimental work on dyeing, finishing, laundering, and weathering.

Textile Engineering & Equipment Corp., Greensboro, N. C., has been chartered with authorized capital of $300,000 and subscribed stock of $30,000 to deal in machinery of all kinds. Incorporators are: Russell F. Hall, Allen H. Watkins, Ray H. Taylor, all of Greensboro.

MARTIN W. MUELLER, who will be in charge of the laboratory of the new Hosiery & Underwear Division of Commonwealth Color & Chemical Co., Brooklyn, N. Y. He will act as director of research and technical service work for the new unit. Following his college training, he became associated with Phoenix Hosiery Co., Milwaukee, Wis., having experience in knitting, in dyehouse laboratory, and later as director of research. In 1941, he became associated with the General Athletic Products Co., Greenville, Ohio, as superintendent of dyeing, bleaching, and finishing. Mr. Mueller retained this position until joining Commonwealth. Commonwealth's new Hosiery & Underwear Division is the result of a long-range program, and the control laboratory, recently completed, is equipped with the latest post-war processing and testing equipment. The new division will be under the management of Charles M. Robbins.

Leo Lenk, representative of Emmons Loom Harness Co. in Mexico, has severed his former business connections and is now in business for himself at Avenue Republica de Guatemala No. 4, Desp. 302, Mexico, D. F.

Warwick Chemical Co. has appointed Oliver L. Bennett formerly of Riverside & Dan River Mills, Danville, Va., to the technical sales staff of its Rock Hill, S. C., plant.

John Waldron Corp., New Brunswick, N. J., has appointed Charles A. Dickhaut as chief of research and development. He has been associated with the Waldron Co. for 20 years.

Crescent Corp. has purchased the century-old O. B.

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BUSINESS TODAY has returned to the stresses and uncertainties of competitive business . . . business that will see new innovations . . . new products . . . new markets. Changes will occur that every alert concern must meet.

Your success . . . in the new competitive markets . . . will require adequate financing and authoritative credit checking.

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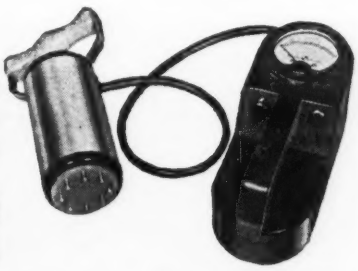

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Tests flat, irregular and curved surfaced materials in 3 seconds or less

Here is the all-purpose moisture testing instrument you have been waiting for.

Each button of the electrode is individually spring-cushioned to allow maintenance of contact regardless of contour — no points to break off or injure surface. It is completely portable, and can be operated by anyone.

The same exacting scientific research and precise engineering development that have made L-2 (lumber) and V-2 (veneer) models of Moisture Register the standard in their fields make the new model K-2 an accurate, dependable addition to this famous line. Write today for complete information, specifying type of material and per cent range of moisture content you wish to test.—Moisture Register Co., Dept. G, 133 North Garfield Avenue, Alhambra, California.

Direct reading dial shows moisture content of:
Paper in Stacks or Rolls
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. . . and many other materials

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The Standard in MOISTURE TESTING FOR ALL INDUSTRIES

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Detroit • New Orleans • New York • Philadelphia
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Wetherell & Son Co., Fall River, Mass., one of the oldest textile roll-covering manufacturers in the United States. Jacob Ziskind, president of Crescent, will become president of Wetherell, and will continue the business in Fall River where 75 are employed.

Ciba Co., New York, has welcomed back to its staff from their military service Maj. Clement O. Stevenson, S.Sgt. Robert L. Horney, and Lieut. Chester M. Kopatch. Major Stevenson and Sargeant Horney are connected with the Southern branch office of the Ciba Co. at 1517-23 Hutchinson Ave., Charlotte, N. C. Lieutenant Kopatch will return to the New England branch office at 157 Federal St., Boston, Mass.

Foxboro Co., Foxboro, Mass., has added Ward S. Yunker to its staff at the home office as assistant manager of the fiber-industries sales division.

Pennsylvania Salt Mfg. Co., Philadelphia, has transferred Joseph A. Noone, chief chemist at its Greenwich Works, to the company's executive offices in Philadelphia. He will handle labelling and regulatory matters in connection with the company's products. Pennsylvania Salt has appointed Warner R. Over as treasurer, to succeed L. A. Smith, retired, who served as vice president and treasurer. Mr. Over, who has been with the company for 41 years, will retain the office of secretary which he already holds.

Columbia Chemical Division of Pittsburgh Plate Glass Co., Pittsburgh, has appointed Harry W. Gleichert as director of sales for the division. Mr. Gleichert has long been associated with Columbia, starting with the company in 1920. In 1937, he was made assistant director of sales.

B. F. Goodrich Chemical Co., Cleveland, Ohio, has named Robert P. Kenney, formerly manager of international service, to be manager of international sales.

Quaker Chemical Products Corp., Conshohocken, Pa., has added James Bosworth Irvine to its staff of research chemists. Mr. Irvine has been engaged in analytical and research work in the laboratories of Hercules Powder Co., O. F. Zurn Co. and Collins & Aikman Corp.

ALBERT H. CHARLTON, who has been named sales manager of the Aluminum Division of Reynolds Metals Co., with headquarters in Louisville, Ky. He joined Reynolds in 1936 and was most recently eastern sales manager for the Aluminum Division, with headquarters in New York.

Philadelphia Quartz Co., Philadelphia, has added Dwight L. Turner to its sales staff. Mr. Turner, whose home is in Greensboro, N. C., is assigned to the Southern territory.

General Electric Co. has taken over 100,000 sq. ft. of floor space in the former Great Falls Mfg. Co. building, Somersworth, N. H., for a new plant.

Union Special Machine Co., Chicago—Clarence Rosenquist, on leave of absence from the sales department of Union Special Machine Co., received promotion to the rank of lieutenant commander while on active duty with the Navy in the European theater.

The Wiremold Co., Hartford, Conn., has appointed Joseph R. Dillon to be in charge of the purchasing department to succeed George M. Armor who has retired after 25 years of service.

Foster D. Snell, Inc., Brooklyn, N. Y., has added Chester A. Snell to its staff. For the last three years, Dr. Snell has been connected with the Chemical Development Division, Aluminum Co. of America, East St. Louis, Ill.

Processed Plastic Co., San Francisco and Chicago, will open a New York office on the 80th floor of the Empire State Building, on Jan. 2.

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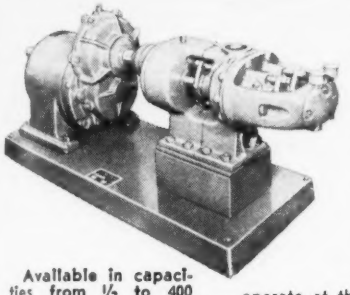

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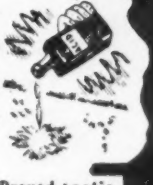

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NEWS ABOUT Mills

Cotton Mill News

American Thread Co., New York, which recently purchased the two large plants of the Hampton company at Clover, S. C., plans to increase the capacity of the newly acquired plants.

Avondale Mills, Sylacauga, Ala., have placed orders for new equipment totaling $1,250,000. They expect delivery on all of this equipment within the next eight months. The major items include opening room equipment, some new spinning and change-over of some old spinning to long draft, some new looms, the air conditioning of several departments, and the addition of some finishing equipment.

Bancroft Lace Co., Inc., West Warwick, R. I. has purchased the Warwick Lace Works, 60 East Main St., West Warwick, R. I. No change in personnel is contemplated.

Richard Borden Mfg. Co., Fall River, Mass.—Property of this company is being acquired by new interests, headed by Abraham Radin, New York, N. Y., for a reported consideration of about $750,000, which will operate it in future.

Buffalo Mills, Shelby, N. C.—This property had been purchased by Clay V. Richardson, head, Clayson Knitting Co., Star, N. C., who will continue operations for yarn manufacture, as heretofore. Output, it is said, will be used for a hosiery mill to be operated at Biscoe, N. C.

China Grove Cotton Mills, China Grove, N. C., has plans maturing for one-story addition, with installation of about 15,000 spindles and auxiliary equipment. Proposed to begin erection early in January.

Crescent Corp., Fall River, Mass., has purchased the machinery of the National Dixie Mills, Inc., Newnan, Ga.

Eastman Cotton Mills, Eastman, Ga., is modernizing its plant facilities at a cost of $125,000.

Erlanger Cotton Mills, Lexington, N. C., have sold Plant 2 equipped with 1,500 cotton spindles, to Clarence A. Ross, Gastonia, N. C., and associates. Vivian M. Manning, Greenville, S. C., handled the sale as a broker.

Gaffney Mfg. Co., Gaffney, S. C., has sold a complete weaving unit, or practically half the machinery in the plant, to the Crescent Corp., Fall River, Mass.

Gastonia Combed Yarn Corp., Gastonia, N. C. has purchased control of Morowebb Cotton Mills, Dallas, Tex., and will operate in future as an affiliated interest. Mill improvements are planned.

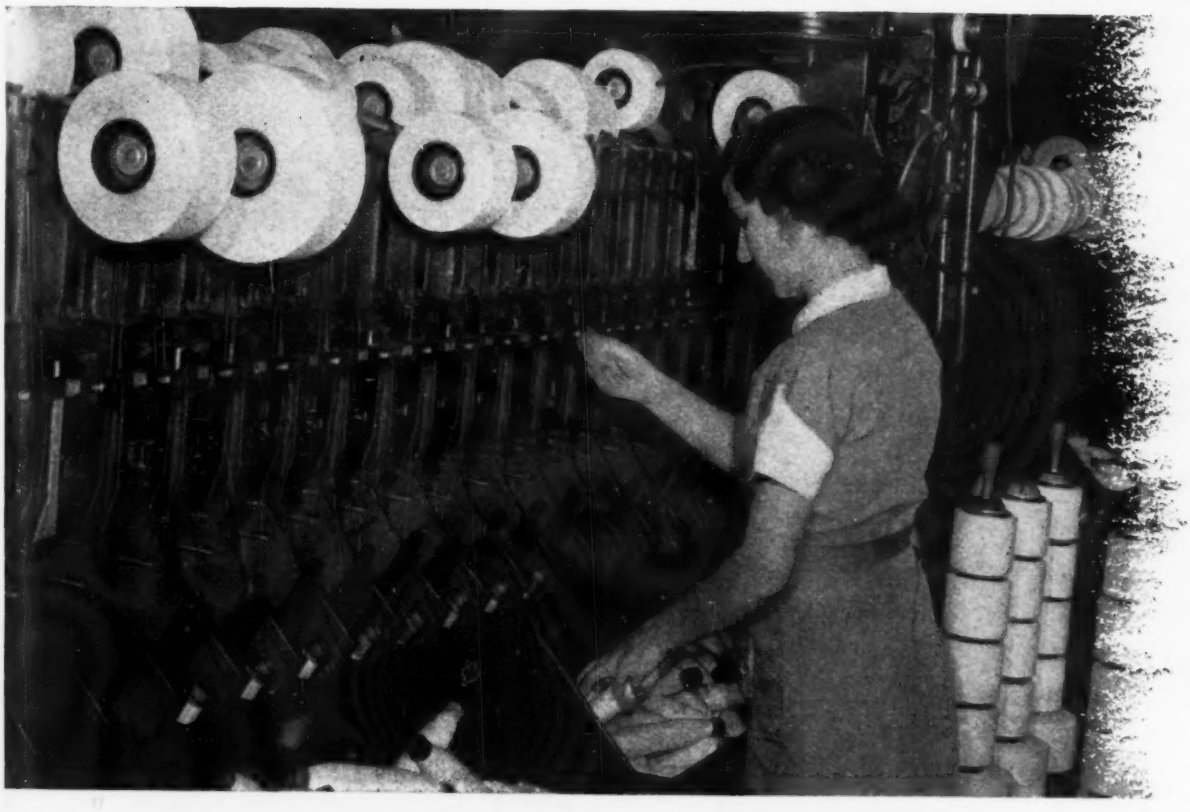
Glen Raven Cotton Mills, Glen Raven, N. C., has begun work on one-story weave shed, for which general contract recently was awarded to J. O. Bayliff, Burlington, N. C., reported to cost approximately $100,000, with equipment. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

High Point Fabrics, Inc., High Point, N. C., recently formed with capital of $100,000, plan early operation of new local cotton mill. Benjamin L. Herman and Christine Tucker, both High Point, are principal incorporators.

Joanna Textile Mills, Goldville, S. C. (previously reported) have awarded contract to Daniel Construction Co., Greenville, S. C., for additions to mill, including improvements in number of existing structures. Cost reported close to $1,500,000, with equipment. Lockwood, Greene Engineers, Inc., Spartanburg, S. C., are architects and engineers. Contract for 50 dwellings and an apartment house will soon be let.

Mid-State Cloth Mills, Red Springs, N. C., have awarded general contract to C. M.

BARBER-COLMAN AUTOMATIC SPOOLER



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The installation of Barber-Colman Automatic Spoolers will improve your mill operations in many ways. This machine produces a better cheese for the warper, resulting in fewer warper stops. The beam that goes to the slashers is more uniform throughout and will help to improve efficiency of operation in the slasher room. The loom beams are better, too, so there are fewer loom stops in the weave room, producing better cloth for the finishers. Thus Barber-Colman equipment can give you, not only better winding, but increased production and lower costs all down the line. Barber-Colman Automatic Spoolers have demonstrated, through years of steady service, that they give very little trouble, require few repairs and very few service calls, and deliver uniform packages day after day with a minimum of down time. *For details on how you can profit from use of this equipment, see your Barber-Colman representative.*

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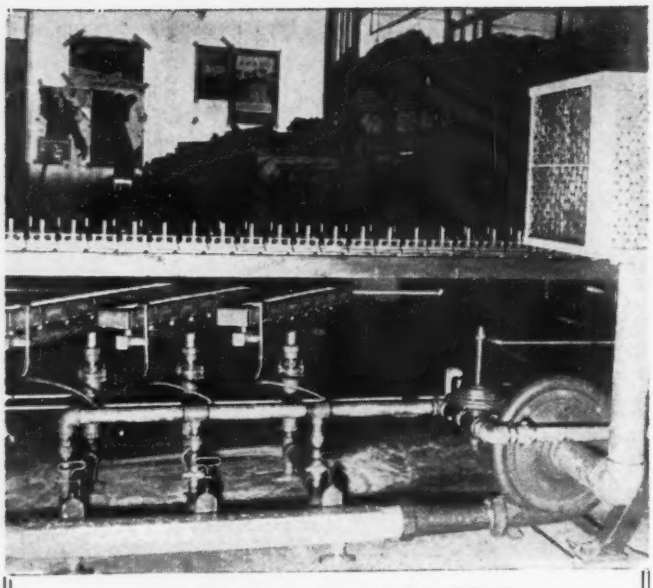

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PALMER BLANKETS—also available for your special requirements.

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KENWOOD WOOL PRODUCTS

F. C. Huyck & Sons
KENWOOD MILLS
Albany, New York

Guest & Sons, Greensboro, N. C., for several new one-story mill units, comprising weave shed, cloth room, knitting mill, and other structures.

Nashua Mfg. Co., Boston, Mass., has purchased property at North Monmouth, Me., known as Annabessacook Mills, and will remodel and equip for new branch mill. It is understood that the company will remove its present Bower division mill at Lewiston, Me., occupying leased property, to new location, where additional facilities will be provided for increased output.

New Braunfels Textile Mills, New Braunfels, Tex., has begun erection of new one-story addition for expansion in weave room, for which general contract recently was awarded to Leslie Crockett Construction Co., Austin, Tex., reported to cost close to $100,000, with equipment. R. V. Swartwout, New Braunfels, is architect.

Springs Cotton Mills, Lancaster, S. C., has plans maturing for new one-story bleaching and dyeing mill, 400x1000 ft., on site near city, fronting on Catawba River. Several adjoining smaller structures will be built. A power house is planned. It is understood that erection will begin early in 1946. Cost reported over $2,100,000, with machinery.

Stevens Realty Co. has sold to the Rost Realty Co. property of the former Stevens Mills, Fall River, Mass., with the exception of one building known as the No. 2 weave shed.

Irvin Turk, manager Buffalo Mills, Shelby, N. C., recently sold, is planning early establishment of a new cotton yarn mill on site near city. It is understood that a new company will be organized to carry out project.

Osceola Products Co., Osceola, Ark., has purchased the Purina Cotton Mill and plans an expansion program.

Profile Cotton Mill, Jacksonville, Ala.—A news item is prevalent in the south to the effect that 75,000 spindles and related machinery is being shipped by Profile to Syria to be set up for operation there.

Riverside & Dan River Cotton Mills, Danville, Va., have awarded contracts for $2,400,000 improvements to be carried out at Schoolfield, between now and the middle of next year. A new power plant costing $900,000 is planned; also a $500,000 cotton warehouse, new finishing machinery costing $750,000 and a $250,000 filtration plant. Chas. T. Main, Inc., Boston, is consulting engineer.

Rosemary Mfg. Co., Roanoke Rapids, N. C., has begun erection of one-story addition to slasher house, reported to cost about $45,000, with equipment. Construction award has been made to C. M. Guest & Sons, Greensboro, N. C.

Whitney Mfg. Co., Whitney, S. C.—Property of this company has been purchased by Crescent Corp., Fall River, Mass., textile machinery dealer and liquidator, which will convert for branch machine works for parts manufacture, repairs, service, etc.

Wool Mill News

Blackinton Woolen Mills, North Adams, Mass., property of RFC since 1940, will revert to local ownership. Authority to buy the property and machinery from RFC has been granted the North Adams Industrial Co., which will lease the mill and machinery for six years to the Blackinton Mills, Inc., with an option for purchase by lessee.

W. E. Burcham, for 28 years associated with Chatham Mfg. Co., Elkin, N. C., and part of that time a departmental supervisor, will establish a small plant for the manufacture of drapery material at Boonville, N. C. He has purchased 18 looms for weaving.

Dearnley Bros. Worsted Spinning Co., Philadelphia, Pa., plans extensions and improvements in power plant at mill, estimated to cost close to $50,000, with equipment. Mensing & Co., 2845 Frankford Ave., Philadelphia, are consulting engineers.

Georgiaville Worsted Spinning Co., Georgiaville, R. I., has recently been formed with James Conway proprietor. He is in full production of worsted yarns on the Bradford system, selling direct from the mill.

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Dura Beau FINISHES

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. . . have brought luxurious sheerness and "miles more wear" to glamourous hose. Two generations of discriminating women have had the assurance . . . intangibly given . . . of exquisite hosiery charm by Dura Beau.

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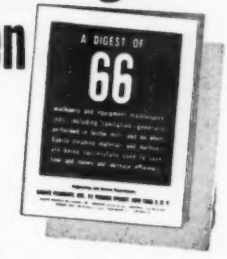
FREE Maintenance Digest for Mill Men



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NEWS ABOUT MILLS

H. & H. Yarn Co., Millbury, Mass., has been organized by H. B. Goldberg, president and manager and Walter J. Schaad, treasurer. It operates 3 sets of cards and 1500 spindles.

Holyoke Worsted Mills, Inc., Holyoke, Mass., are completing the installation of 12 new Crompton & Knowles worsted looms. This will increase production 50%.

Keene Woolen Mills, Inc., Gilsum, N. H., have been sold by Max Furman, Norwich, Conn., to L. F. Harder, New York, who will operate the plant under the new firm name of Gilsum Woolen Mills, Inc.

Macon Textiles, Inc., Macon, Ga., plan construction of a three-story office building.

Magee Carpet Co., Bloomsburg, Pa., is completing plans for new one-story addition for expansion in machine division, estimated to cost about $140,000, with equipment. Ballinger Co., Philadelphia, Pa., is engineer and architect.

Millville, Mass.—The former U. S. Rubber mill at Millville has been purchased by Philip and Louis Macktez, who have moved their waste business from Woonsocket, R. I.

Moose Jaw, Saskatchewan, Can.—A woolen mill, set up under the direction of J. V. Clement, formerly of Massachusetts, is now in operation manufacturing blankets.

North Star Woolen Mills Co. Minneapolis, Minn., may locate a new branch plant in Arkansas. The company's representative has requested detailed information on possible locations from the State Development Commission. Arkansas law gives the governor and the commission authority to exempt a new industry from taxation by the state for a maximum of 10 years.

Paragon Yarn Mills, Inc., Millbury, Mass., headed by Cecil Anderson, is a new woolen mill equipped with 4 sets of cards and 850 wide gage mule spindles.

Royal Woolen Co., Sabattus, Me.—The three upper floors recently collapsed when a jack buckled during relocation of floor supporting poles, causing damage of $100,000.

Souther Processing Co., Stoughton, Mass., is a new concern formed to sort, blend, and dust wool waste. It is headed by Channing W. Souther, formerly with Arthur I. Darman Co., Inc., Woonsocket, R. I.

Stanrich Mills, Worcester, Mass., until recently commission weavers of woolens and worsteds, have taken additional leased space in the mill building and have installed carding and spinning machinery.

John Walther Fabrics, Inc., Reading, Pa., has purchased the four-story industrial building and one story annex at the northeast corner of D and Ontario Sts., from George Barnes for $73,000.

Rayon & Silk Mill News

American Silk Spinning Co., Providence, R. I., has ordered 45 spinning frames in addition to its present complement of 80; 12 winding machines, 10 roving frames, and some minor equipment.

American Viscose Corp., Wilmington, Del., has awarded general contract to J. P. Pettyjohn & Co., Lynchburg, Va., for new additions to mill at Nitro, W. Va., to cost over $1,200,000, with equipment.

Belding-Heminway Co., New York, next spring will erect a $1,500,000 nylon processing plant at Morristown, Tenn.

Burlington Mills, Greensboro, N. C., has concluded arrangements whereby its affiliate in Medellin, Colombia, S. A., will start production next month with 100 looms on spun rayon and filament rayon fabrics. Later in 1946, 200 more looms will be added. Plant is known as Textiles Panamericanos and is owned 50% by Burlington and 50% by Fabricato of Medellin. Mill is windowless and air-conditioned throughout; has its own dyeing and finishing department; will be known as "Pantex". Directors include Britt Armfield, Jaime Echavarria, Eduardo Lendono, Diego Restrego, Eduardo Vribe. General manager is Luis J. Villa; superintendent Junius Murphy (formerly of Burlington's Roanoke mill).

Celanese Corp. of America, Burlington, N. C., has awarded

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NEW FIBRES AND PROCESSES

general contract to Hughes-Foulkrod Co., Philadelphia, Pa., for 2½-story addition to local yarn mill, for expansion in spinning, carding and other departments. An air-conditioning system will be installed. Extensions will be made in boiler house. Cost over $700,000, with equipment.

Century Ribbon Mills, Inc., York, Pa., plan a $300,000 addition, including a new weave shed, completely air conditioned.

Duplan Corp., New York, N. Y., plans one-story nylon processing mill at Winston-Salem, N. C., where site recently was acquired, reported to cost over $250,000, with equipment.

Easthampton Weaving Co., Easthampton, Mass., organized by Eugene J. Martin, of Holyoke, Mass., a discharge veteran, has leased mill space amounting to 15,000 sq. ft., and will manufacture rayon goods for New York converters. Eighty looms will be set up, and 50 employes used to begin operations. Mr. Martin is a former superintendent of the Holyoke Mills.

Lincoln Yarn & Textiles, Inc., Pawtucket, R. I., has been organized with capital of 200 shares of stock to operate local rayon and nylon yarn mill. Edwin O. Halpert, 220 Cleveland St., Pawtucket, is principal incorporator.

Louisville Textiles, Inc., Louisville, Ky., has $107,000 worth of new machinery on order, of which about 10% has been installed. About $150,000 more is to be spent on new looms, dyeing machinery, etc., with deliveries running into 1947.

Northwood Textile Mills, Inc., has taken over the manufacturing facilities of La France Industries in Frankford, Philadelphia, Pa., and is now in operation.

Pendleton Mfg. Co., division of La France Industries, La France, S. C., is erecting a $75,000 community building to replace several obsolete structures. It will be a two-story structure built on a terrace so that the upper or main floor will be on a level with the road.

Silk Fiber Mills, Keene, N. H., have been acquired by the Charlestown Woolen Co., Charlestown, N. H. Weaving and finishing will be added in a new, one-story addition. S. Frankel, of New York, will be president of the company.

Southern Silk Mills, Inc., Kernersville, N. C., rayon piece goods, awarded contract for construction of a one-story addition of brick and steel to George W. Kane Co., Greensboro, N. C. New building will be completed about Mar. 1.

Tennessee Eastman Corp., Kingsport, Tenn., has expansion of production facilities now under way which will cost over $5,000,000 during each of the years 1946 and 1947.

Textron, Inc., has offered to buy shares of Nashawena and Nonquitt mills stock at $40. The shares number 75,000 and 48,000 respectively. Stock was deposited with the First National Bank of Boston, Mass. William Whitman, Jr., president of the two New Bedford (Mass.) mills announced the offer from Textron. Textron, Inc., has augmented its men's wear division at Easthampton, Mass., by leasing part of the property known as the Old Talmer plant at Middletown, Conn. Textron, Inc., is also interested in locating industrial buildings in 10 New England towns to decentralize its sewing operations. Minimum of 100 women will be employed in each. Textron, Inc., has announced that the Lonsdale Co., with mills at Cumberland and Lonsdale, has become a subsidiary through the purchase of 155,431 shares of stock.

United Merchants & Manufacturers, Inc., and Freydberg Bros.-Strauss, Inc., have formed a new company for the manufacture and sale of ribbons and narrow fabrics.

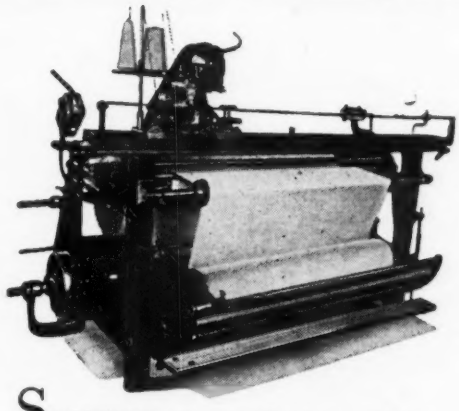
Verney Brunswick Mills, Brunswick, Me., have started construction of a concrete dam across the Androscoggin River which will cost close to $500,000.

Knitting Mill News

R. L. Bothwell, Hickory, N. C., and associates have purchased the Adrian Mill at Newton, N. C., a unit of the Conover Knitting Co. The mill is to be combined with

NEW *Dinsmore*

Opening, Sewing and Re-rolling Machine



SHOWING the application of the Merrow Butted Seaming Head to our No. 4 Opening, Sewing and Re-rolling Machine . . . Produces a strong, flat butt seam on cotton, silk or other piece goods . . . trims off waste edges of goods just in advance of stitching operation . . . The Merrow Butted Seaming Head can be applied to your present machine . . . *write for estimate of cost.*

DINSMORE MFG. CO.

See Also Textile World Year Book and Catalog

SALEM, MASS.

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

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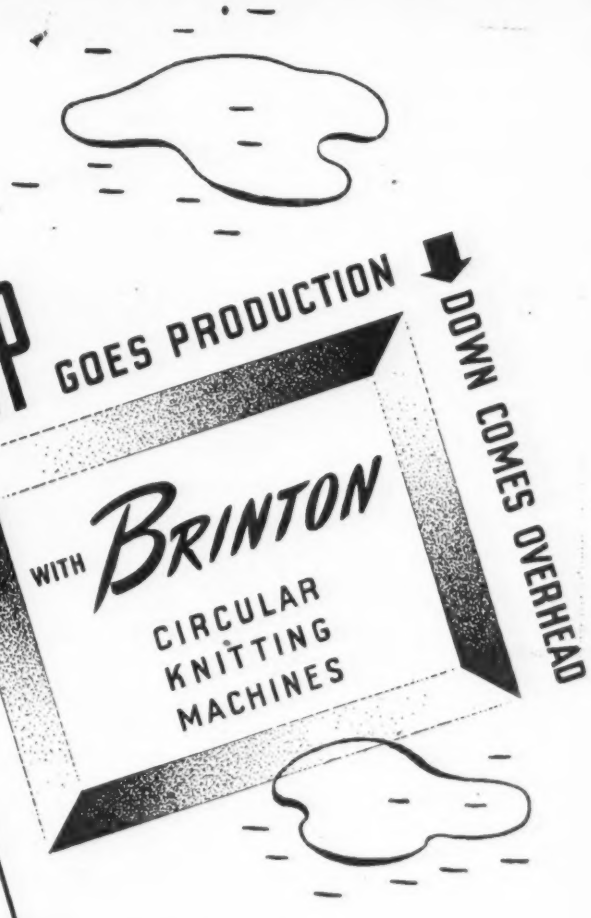
Complete color assortments

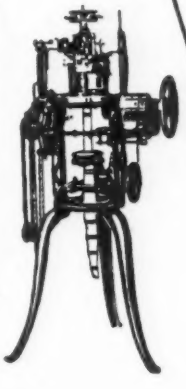
American Woolen Company

225 Fourth Avenue **New York**



BRINTON Circular Knitting Machines keep quality high—increase production—lessen shut-downs—and reduce overhead. They keep on performing day after day—with a minimum of attention That's why you'll find Brinton's in the largest mills, where accurate and scientific records are kept to tabulate the performance of every unit. • We have been making Brinton's for over fifty years, and will be happy to figure with you on your immediate requirements.

Your inquiry will bring full particulars.



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3700 KENSINGTON AVE.
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Where Decay, Odor, Taste, or Acid Is A Problem, Use

Tidewater
RED CYPRESS

Read What Authorities Say About Its Superior Qualities

Romeyn Beck Hough, author of "American Woods", says of Cypress "Its great durability, immunity from the attacks of parasites, and non-liability to great shrinking or warping make it one of our most valuable woods for all woodwork exposed to weather, for tank construction, cooperage, etc. Its value . . . is enhanced by its comparative freedom from coloring or flavoring ingredients".

Phillips A. Hayward, author of the volume on Wood in Chandler Cyclopedia, says that Cypress is "easy to work, available in large dimensions, and resistant to decay". It is also "resistant to changes in moisture, resistant to acids, and imparts neither color nor taste."

For a hundred industrial needs, TIDEWATER Red Cypress is the right answer. Write today for full details.

Tidewater Red Cypress
RED CYPRESS — "The Wood Eternal"

Can be Furnished Promptly from St. Louis Stock

FLEISHEL LUMBER CO.
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the Warlong Glove Co., and the Conover Knitting Co., the three being housed in a new building in Conover.

Dublin Hosiery Mill, Dublin, Pa., recently organized, will begin superstructure soon on new one-story mill to cost over $45,000, with equipment.

Gastonia Full-Fashioned Hosiery Mill, Inc., Gastonia, N. C., has begun erection of one-story addition, for which general contract recently was let to T. Ernest Morgan, Gastonia. Cost reported over $75,000.

Harvest Fabrics, Inc., New York, has been organized by Seymour and Bernard Kramer, formerly of Kroywen Knitted Products, Inc., to manufacture knitted products for the outerwear and underwear trades. Location is at 799 Broadway.

Holeproof Hosiery Co., of Milwaukee, plans a new hosiery mill at Quitman, Miss.

Larkwood Hosiery Co., Charlotte, N. C., plans expansion of its plant at 2500 North Brevard St., at a cost of $200,000 not including new equipment which is to be installed.

Melrose Hosiery Mills, High Point, N. C., plan construction of two buildings and an addition to the existing plants to double its capacity.

Neal Knitting Mills, Graham, N. C., organized with capital of $100,000, plans early establishment of mill.

Newton Knitting Mills, Newton, N. C., are erecting a one-story addition, to be equipped as a finishing mill. Cost reported over $75,000, with equipment.

Port City Hosiery Mill, Wilmington, N. C., will soon begin erection of one-story modern, windowless mill for full-fashioned hosiery, for which general contract has been let to C. M. Guest & Sons, Greensboro, N. C. Cost close to $100,000, with air-conditioning system and other facilities.

Propper-McCallum Hosiery Co., Florence, Mass., is spending $1,000,000 on a new plant. The new equipment will produce the finest seam for full-fashioned nylons. Fifty-two full fashioned machines will be installed.

Stratford Hosiery Mills, Burlington, N. C., plan one-story mill, estimated to cost close to $55,000. C. C. Hartmann, Jefferson Bldg., Greensboro, N. C., is architect.

United Hosiery Mills Corp., Chattanooga, Tenn., has authorized an expansion and improvement program at mill, with installation of machinery for large increased output. Equipment installation will represent about $250,000.

Van Raalte Co. expects its new plant at Middlebury, Vt., recently constructed to be soon in operation.

Wheeler Hosiery Mill, Brevard, N. C., converting to manufacture nylon hose exclusively, will double its plant capacity as soon as machinery and building materials are available.

Wildman & Schwartz, 1006 Washington Ave., Norristown, Pa., has begun work on new one-story addition to hosiery mill, for which contract recently was awarded to R. L. Ewing.

Processing Plant News

Belmont Converting Co., Belmont, N. C., has let contract to D. M. Rickenbaker, Union, S. C., for new filter plant at mill, including improvements in present unit. Harwood Beebe Co., Spartanburg, S. C., is engineer.

Carolina Process Co., Mount Holly, N. C., plans new one-story mill on South Boulevard, Charlotte, N. C., where tract of land recently was acquired, to cost about $100,000.

Clearwater Mfg. Co., Clearwater, S. C. (previously reported) has asked bids on general erection contract for new rayon finishing mill at Old Fort, N. C., to be located at that place instead of Asheville, N. C., as initially projected. It will comprise several buildings with power house, and is reported to cost about $1,000,000. Six Associates, Inc., Asheville, are engineers.

Long Finishing Mills, Burlington, N. C., plan an expansion program which will cost $100,000 and will include the enlarging of the boarding room, dye house and the boiler room and the addition of several nylon preboarding machines.

Ready to Go... REGARDLESS OF RAIN

Thanks to AQUAROL

REG. U. S. PAT. OFF.

The ultimate in water-repellent finishes

AQUAROL is now available for civilian use for weather proofing fabrics, giving the same protection to the fabrics as given to our Armed Forces.

Mill men know that to specify Aquarol is to assure high water-repellent efficiency for overcoatings, ski suits, sport jackets and slacks and all kinds of rainwear fabrics.

Aquarol will assure customer satisfaction and added sales value without increasing finishing costs.

Produced to meet government specifications during the war and now to meet the demand of the public.

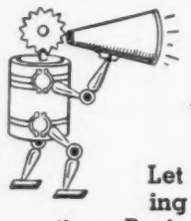
AQUAROL
A Product of the

ARKANSAS CO., INC.

Manufacturers of Industrial Chemicals For Over 40 Years.

NEWARK NEW JERSEY

Let Southworth Help You



Let Southworth help you in making your plans for more Peacetime Business and Profits. Get the increased production and lower costs made possible by SOUTHWORTH'S new, improved, TEXTILE HUMIDFYING SYSTEMS.

A new SOUTHWORTH system will give you a simplified design that means better evaporation and more sensitive control combined with exceptionally flexible power.

Write Today for Complete Information

Southworth Machine Co.

Textile Humidifying Systems

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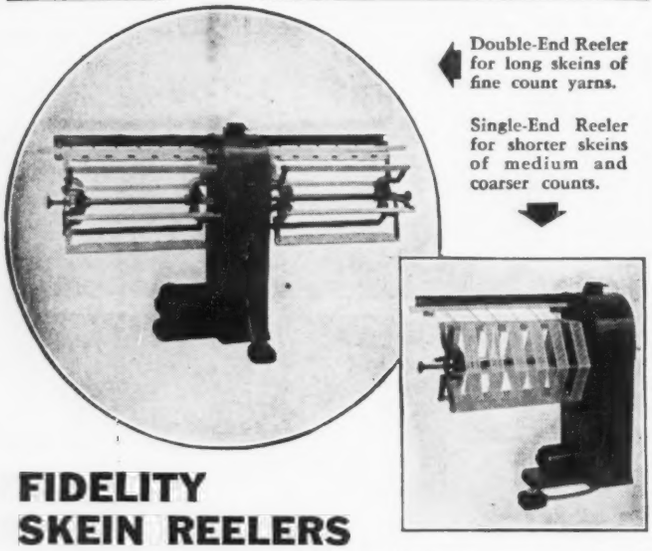


Double-End Reeler for long skeins of fine count yarns.

Single-End Reeler for shorter skeins of medium and coarser counts.

FIDELITY SKEIN REELERS give you these 9 Advantages

1. All work at comfort level—no high lifting.
2. Less floor space—from 13% to 55% saving.
3. Less idle time per reel.
4. Less net doffing time.
5. Greater production in pounds of yarn per hour.
6. Generally shorter winding time through speed changes.
7. Fractional HP gear-head, brake-motor with foot-button release to leave operator's hands free.
8. Available to give straight or diamond "lay."
9. Easy, accurate control of skein weight and yardage.

Detailed information on request.

FIDELITY MACHINE COMPANY

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

NEWS ABOUT Men

Robert T. Stevens J. P. Stevens & Co., New York, who was recently released from active duty as colonel in the Army, has received the Legion of Merit Medal with a citation for exceptionally meritorius conduct in the performance of outstanding services as chief of Clothing & Textile Branch, and deputy director for Purchases Procurement Division, Office of the Quartermaster General.

Charles A. Sweet, who recently resigned as president of Wellington Sears Co., New York, has become senior executive with Iselin-Jefferson Co. on Jan. 1.

Julian H. Robertson has been released from the Army and has returned to his duties as president and treasurer of North Carolina Finishing Co., and North Carolina Fabrics Co., of Yadkin, N. C. He was a lieutenant colonel.

Lester Martin, head of Loomcrest Co., New York, is the new president of Chalmers Knitting Co., with **Louis Cowen** as treasurer. The two are the new owners of the underwear plant at Amsterdam, N. Y. Other officers are **David Coan,** secretary; Howard Hubbard, assistant treasurer; **G. W. Childs,** vice president.

Elmer L. Ward, president of Goodall-Sanford, Inc., Sanford, Maine, announced his firm will award at least one scholarship a year to any young man in its employ who can fill the requirements set by the committee appointed to make the awards. Purpose is to train for supervisory or technical jobs.

Roy E. Jones who has been vice president and general manager for over 20 years, has been elected president of Seneca Knitting Mills, Inc., Seneca Falls, N. Y.

Kenneth W. Marriner, former WPB official in charge of the Textiles, Leather & Fibers division, has been elected to the board of governors of Wool Associates of the New York Cotton Exchange, Inc. Mr. Marriner recently resigned his government war-time post to rejoin his firm of Winslow Bros. & Smith Co., Boston, Mass.

Sidney D. Kirkpatrick, winner of the Chemical Industry Medal for 1945, was guest of honor at the presentation dinner held by the American Section of the Society of Chemical Industry in New York on Nov. 9. Mr. Kirkpatrick is editor of the McGraw-Hill publication, *Chemical & Metallurgical Engineering.*

Harold J. Walker, treasurer of Uxbridge Worsted Co., has been elected to head the Associated Industries of Massachusetts.

S. Mortimer Bloom, who since January, 1941, has served as president of Putnam Mills Corp., Putnam, Conn., has resigned and disposed of all his stock to his associates in that concern.

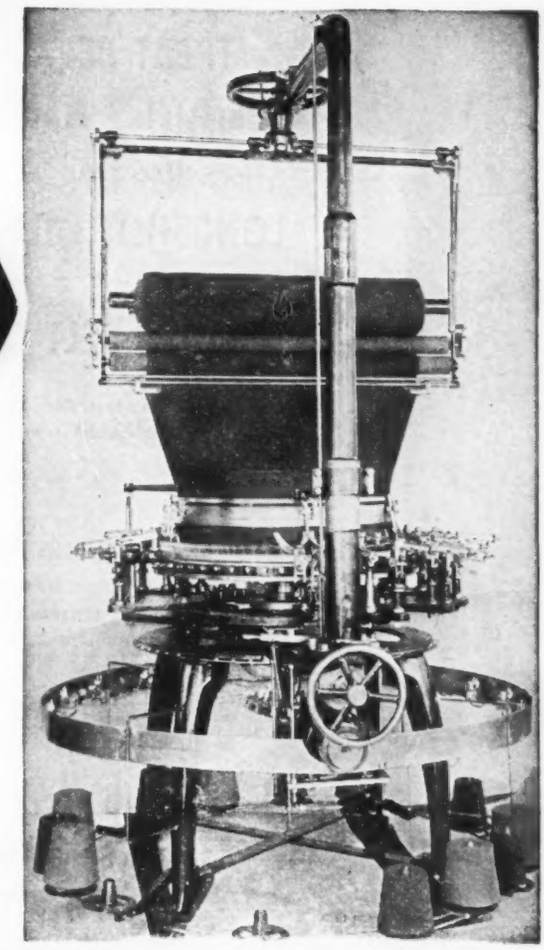
John A. Simmons has been elected vice-president and general manager of Lanett Bleachery & Dye Works, Lanett, Ala.

Earl B. Morgan has been appointed vice-president James Lees & Sons Co., Bridgeport, Va., the parent company of the Lees-Cochrane Co., Inc., of Glasgow, Va. **Wert Faulkner** succeeds Mr. Morgan as general manager of the Lees-Cochrane Blueridge plant.

S. Lane Dwinell, of Lebanon, was elected to succeed **George C. Lincoln,** of Manchester, as president of the New Hampshire Manufacturers' Association at the organization's 23rd annual meeting held in Manchester.

Sidney S. Korzenik has been promoted to the rank of major in the Army. On leave as executive secretary and counsel the National Knitted Outer-

Single Head Spring NEEDLE Knitting Machine



PRODUCES 100 YARDS PER 8 Hr. DAY

The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

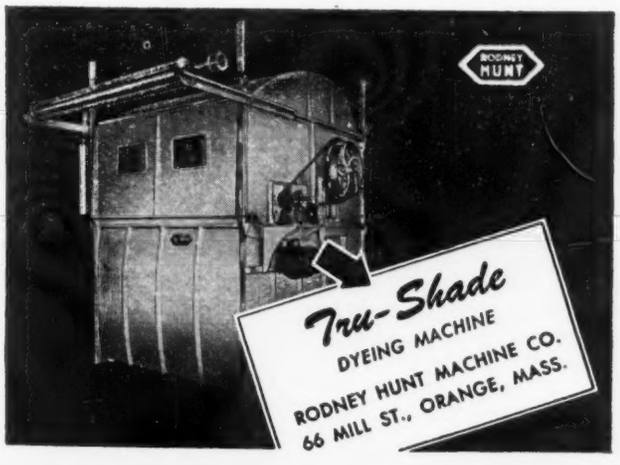
Production is approximately 100 yards per 8 hour day, using 6 feeds.

Features: Electrical driven by V belt simplified motor drive . . . electrical yarnstop motion . . . and needle stop motion.

Install one of these machines today, and in a few hours after reaching the mill it will be ready for operation!

For details write us direct.

TOMKINS BROS. CO., INC.
ONEIDA ST. SYRACUSE, N. Y.



THE LOYAL T. **IVES** COMPANY
EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

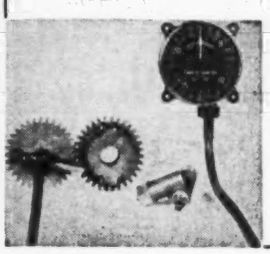
INDISPENSABLE
FOR
CONTROLLING
AND

INCREASING PRODUCTION

Every textile plant can benefit through the use of Jones Tachometers. Used for checking RPM; provides instantaneous and continuous check on operating speeds of rollers, shafts and other rotating parts; indicates shaft RPM, feet per minute, total output and other essential production information. Allows machines to run at peak productive rate safely. Speed changeovers to different types of production.

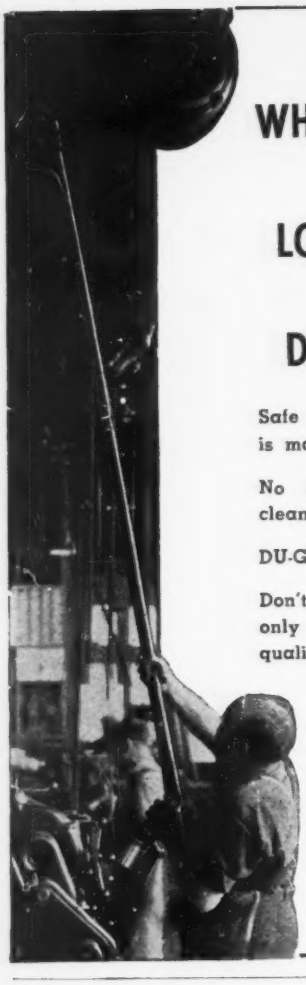
Jones Portable Hand Tachometers are continuous indicating, centrifugal movement, with guaranteed calibration. Lightweight, heavy-duty. Multi-range tachometer complete with 4" extension rod, convex and concave rubber tips, 12" circ. peripheral disc, centerpunch and carrying case . . . $60 FOB Stamford, Conn. Single range portables available in wide variety of ranges. Write for specifications.

JONES FIXED TEXTILE TACHOMETERS



Jones Fixed Textile Tachometers for permanent installations are continuous indicating over full-scale uniform 360° dial. Heavy duty, wide variety of ranges, and special dial indications. Specifications and prices upon request.

JONES MOTROLA
437 Fairfield Ave., Stamford, Conn.



TREAT BELTS
WHEN THEY NEED IT!

Use Our

LONGSHOT OILERS

And

DU-GRIP BELT OIL

Safe and twice as fast. Top efficiency is maintained at lowest cost.

No shutdown — no week-end belt cleaning.

DU-GRIP preserves, pulls, and cleans.

Don't be satisfied with a dressing that only preserves. You need all three qualities for hard-pulling belts.

Sample on Request. Also booklet on "Better Belt Maintenance."

DU-GRIP MFG. CO.
3142 Bellevue Road
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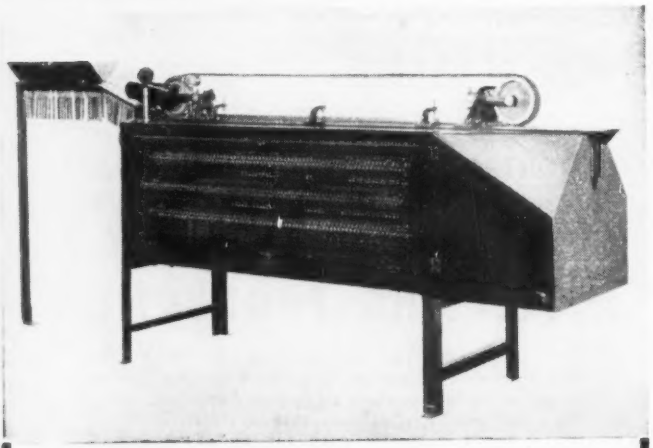


THE TYPE L
LOOM BOBBIN STRIPPER
for
RAYON YARNS

The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . Canada
Geo. Thomas & Co., Manchester, Eng. . European Agent

NEWS ABOUT MEN

wear Association since August, 1942, he joined the Army as a lieutenant. He is serving on the staff of the Quartermaster General, Washington, D. C.

Charles A. Kaufman, for 17 years in charge of the hosiery division of Julius Kayser & Co., New York, has joined Chester A. Roth Co., New York, to head its full-fashioned hosiery division.

William D. Fales, head of the division of textiles and clothing at Rhode Island School of Design, Providence, R. I., and president of the National Association of Textile School Deans, left Oct. 22, to study the educational scheme of German textile schools during the war and their plans for the future. Accompanying Mr. Fales are **Kenneth R. Fox,** Lowell Textile Institute; **Malcolm E. Campbell,** dean of North Carolina State College Textile School, and **A. Ward France,** of the woolen and worsted division, Philadelphia Textile Institute. The group expects to return to this country about the first of the year.

Joe L. Lanier, formerly assistant treasurer, has been elected vice-president and a director of West Point Mfg. Co., West Point, Ga. **T. Scott Avary** was elected assistant treasurer, succeeding Mr. Lanier.

William W. Meyer was recently elected president of the Pennsylvania Textile Executives Association. He has been head designer for Yorkshire Worsted Mills for the last eight years.

David Dott, Jr., has been appointed treasurer of Ravcrest Mills, Pawtucket, R. I., and **Stanley Jessamine,** formerly assistant superintendent has succeeded him as superintendent.

H. E. Rietz has been appointed executive secretary of the Southern Combed Yarn Spinners Association, with headquarters in Gastonia, N.C., which represents over 90% of the combed yarn industry. He has been serving as executive assistant to industry members of the Fourth Regional War Labor Board in Alanta. In the years before joining WLB, Mr. Rietz spent much time in analysis and research work in Dallas and Houston, Texas, for Southwestern merchandising and utilities organizations.

Leonard Smith, of Washington, D. C., has joined the National Cotton Council, Memphis, Tenn., as director of its Scientific Research Section. He was recently discharged from the Army after four years of military service with rank of lieutenant colonel. **Dr. Simon Williams,** who has been directing the council's scientific research program, will become associate director of research for Fabric Research Laboratories, Inc., Boston, on Jan. 1.

Harold G. Foust, of Waynesboro, Pa., is the recipient of the first appointment for the Celanese Corp. of America Fellowship in chemical engineering in Princeton University for the academic session, 1945-46.

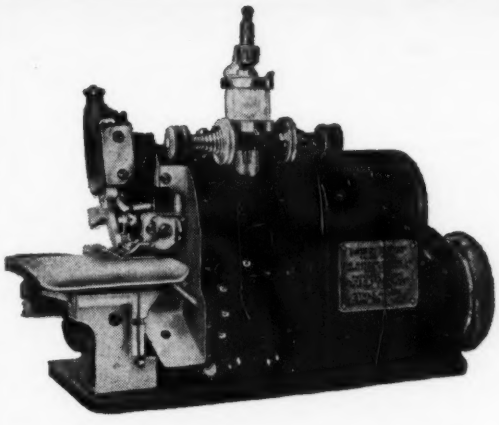
Dr. Burt P. Johnson, formerly with Goodyear Tire & Rubber Co., has been appointed to the research staff of the Institute of Textile Technology, Charlottesville, Va.

Thomas W. Oliver, Jr., chief of the Wool Branch of WPB has accepted a position in charge of coordinating selling and production of Uxbridge Worsted Co.'s output and as assistant to **Harry D. Nichols,** of L. Bachmann & Co., Inc., New York.

Laurie C. Dickson, of Charlotte, N. C., for the last 34 months chief of the Carded Yarn Section of WPB in Washington, has been named Southern representative at Charlotte of the Buscher Yarn Division of Turner Halsey Co. He formerly was an officer and director of the Stevens Yarn Co., Inc.

John B. Baum, who has been serving with the Quartermaster Corps since 1940, lately as colonel, has joined the executive staff of M. T. Stevens & Sons Co., North Andover, Mass., in the capacity of industrial engineer. He was assistant manager at Pepperell Mfg. Co., Opelika, Ala., when he entered the service.

Harold Brooks has resigned as superintendent of Amory Worsted Mill, Manchester, N. H., to become head of a worsted plant in New York State.



Merrow Class A Machines, illustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

TRADE MARK
MERROW **HIGH SPEED**

REG. U. S. PAT. OFF. AND IN FOREIGN COUNTRIES

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

For Use on Knitted and Woven Wear of All Kinds

Quality Results—High Production

Convenient Handling

Minimum Time-Out for Adjustment

or Repair—Low Upkeep Costs

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You on Suitable Machine Arrangements for Various Results and Proper Care and Operation of Machine.

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THE MERROW MACHINE COMPANY

STARTING ITS SECOND CENTURY

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Acme Products

for seamless hosiery knitting

Speak for Themselves

Up-To-Date Machines
Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

CRANE

KNITTING MACHINES

meet the needs for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is versatility . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just **WRITE**

1870 **CRANE** 1945

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY

Complete Parts and Service for

LOMBARD MACHINES

Are Available Again

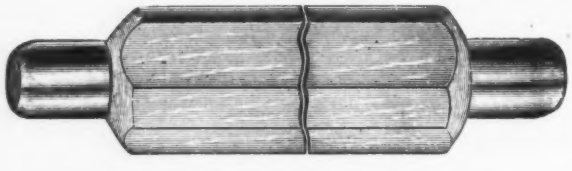
Effective October 11, 1945, we acquired the sole right to manufacture and service all machines and parts (with exception of Peralta Machines) formerly the products of Lombard Machine Co. All patents, drawings, jigs and tools accompanied the sale.

This also makes available immediately complete facilities to recover and repair Lombard rolls.

DeWALT MACHINE & ENGINEERING CO.

A Worcester Industry Since 1930

27 SARGENT ST. WORCESTER, MASS.



DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write.

FRANK BAILEY Cedar Brook, N. J.

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GREENVILLE • SOUTH CAROLINA

Engineers

TEXTILE MILLS • RAYON PLANTS • KNITTING MILLS • DYE HOUSES
BLEACHERIES • STEAM UTILIZATION • STEAM POWER PLANTS
WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

NEWS ABOUT MEN

R. H. Tuttle has been appointed manager of the Zion Lace Curtain Mill, Zion, Ill., succeeding **Lee R. Fleming**, who has resigned. **Charles E. Sieloff**, continues as assistant manager.

Dr. Hugh M. Brown has been appointed dean of the school of textiles at Clemson College, Clemson, S. C. Prof. R. K. Eaton has been acting dean since 1943.

David C. Hardman, production manager of Synthetic Yarns, Inc., Woonsocket, R. I., has been appointed consultant to the president of the Providence Dyeing, Bleaching & Calendering Co., Providence, R. I. He has also been elected a member of the board. Mr. Hardman is a graduate of the Lowell Textile Institute. He joined Synthetic Yarns as a chemist in 1936.

Frank H. Deknatel will retire from active service with the Bigelow-Sanford Carpet Co. Dec. 31, after being with the company 52 years. He began as an office boy with the E. S. Higgins Carpet Co., and has served in various capacities through successive mergers with the Hartford and Bigelow carpet companies, and Stephen Sanford & Sons. Mr. Deknatel has been first vice-president and treasurer of the present company. His successor as treasurer will be **Mark Dunnell**, now comptroller. **John J. Kenney** has been made assistant treasurer, and **John O. Blomquist** assistant comptroller.

George M. Jolly, formerly manager of the yarn division of the William Whitman Co., has joined Unique Fibres, Inc., as general manager, with offices in the Empire State Building, New York. Unique Fibres, Inc., produces Natura Yarns spun of fur fibers by a special process known as Blandlok.

George E. Spofford, Jr., has been named to the newly created position of general manager of the Manchester, N. H., plant of the Chicopee Mfg. Co. He was formerly special assistant to the president at the home office of the parent company in New Brunswick, N. J.

N. W. Smith, Jr., has become advertising manager for Wellington Sears Co., and will be in charge of Martex and other advertising for the company. He succeeds **Norman Horne**, who has resigned after being with the company 15 years.

Carl Mattmann, Jr., has been appointed director of the fabric department of Textron, Inc. For the last 15 years he has been manager of the fabric development department of A. M. Tenny Associates, Inc., New York.

William D. Benson, for six years manager, viscose rayon sales division, American Viscose Corp., N. Y. has been appointed general sales manager.

Walter O. Simon has been appointed manager of the rayon plant of E. I. du Pont de Nemours & Co., Buffalo, N. Y., to succeed **Cantwell Clark**, who has been made manager of the company's nylon plant at Martinsville, Va.

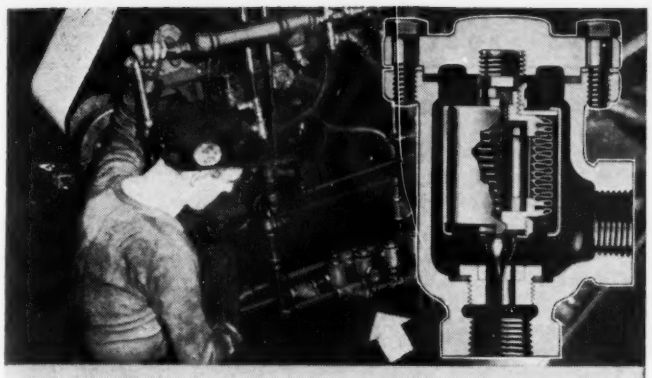
Norman Randolph has joined the industrial relations department of American Viscose Corp., New York, where he will specialize in the work of reemploying and finding suitable jobs for the company's returning servicemen, cooperating with the company's Veterans' Reemployment Committee. He was retired from the Army last May with rank of brigadier general.

Paul Chapman, for 17 years associated with the North American Rayon Corp., and the American Bemberg Corp., at Elizabethton, Tenn., as superintendent of construction, has resigned and is now associated with Eustus Lancaster, Jr., Associates, manufacturer's agents at Knoxville, Tenn., and Johnson City, Tenn.

Frank F. Hilson has joined the advertising department of American Viscose Corp. He will handle sales promotion and merchandising work in connection with the company's "Crown" Tested plan. He was formerly with *Good Housekeeping Magazine* and H. K. McCann Co.

Richard Steinwag has been appointed by Cohn-Hall-Marx Co. as head of yarn purchasing for the Cohama Woolen Department, New York.

Curtis E. Bowne for the last four years merchandise



THE STEAM TRAP for HEAVY STEAM USERS

In process work, cooking time is governed more by air venting than trop capacity or speed. Actual output of cooking and similar equipment will be greatly increased.

The new No. 9 will operate almost as fast as a bucket trap—but have full capacity at condensate temperatures within 20 degrees of the steam. It is thermostatic trap efficiency with bucket trap capacities — a whole new field of applications for the No. 9.

Like other No. 9's, this trap is wide open when cold. It can't freeze. It requires no seat change when pressures change. It is small, inexpensive and easy to install. Ask for Bulletin No. 250.

199

SARCO SAVES STEAM

SARCO COMPANY, INC.
475 Fifth Avenue, New York 17, N. Y.
SARCO CANADA, LTD., 85 Richmond St. W., TORONTO 1, ONT.

Style 20

LANE

The IDEAL BASKET for

LOOPERS

SEAMERS

RIBBERS

GENERAL

W. T. **LANE** & BROS., Inc.
Manufacturers : POUGHKEEPSIE, N. Y.

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

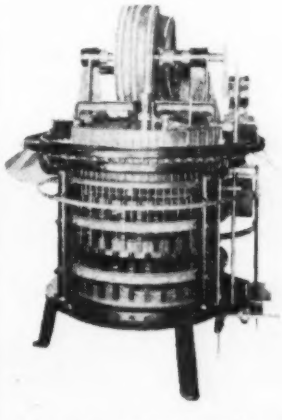
Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville Ky.

Caldwell TANKS AND TOWERS

Saylor Loom

— HIGH SPEED — EFFICIENT —



Low cost of upkeep and simplicity are two of the outstanding features of this loom.

We design and build these looms to suit your requirements.

A strictly uniform tension. Automatic stop on all threads.

Complete and adjustable tension of the warp threads while the loom is in motion.

Easy, smooth and light heddle action, which opens the threads so the shuttle may pass freely.

One operator can attend a large number of machines.

This loom is built with 2 or 4 shuttles, giving the highest production possible.

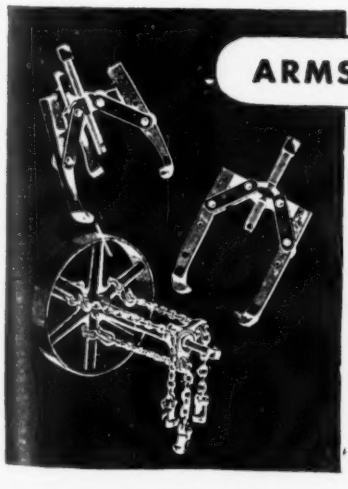
Material and workmanship throughout are the best. It is a high-class weaving machine.

A loom covering is the best and most desirable for hoses, cables, etc. Ask about "SAYLORTUBE."

Write for detailed description.

FRANK D. SAYLOR & SON

13095 GREELEY AVE., DETROIT 3, MICH.



ARMSTRONG-BRAY

GEAR AND WHEEL PULLERS

Prompt Shipment

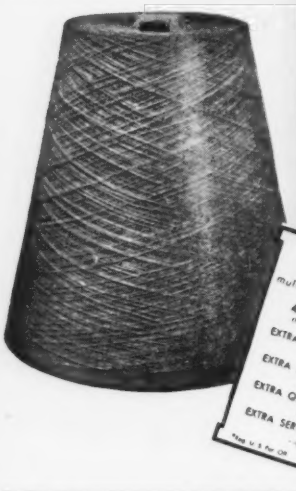
Save hours of time, prevent costly breakage and long shut-downs. STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 34 types and sizes.

CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

Write for Catalog Sheets

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5340 Northwest Highway
Chicago 30, U.S.A.

AMERICAN



... more economical to use because ....

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

Mr. W. H. Suttenfield—Vice Pres. and Sales Mgr.

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Mr. W. H. Davenport
735 Chestnut Street

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Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

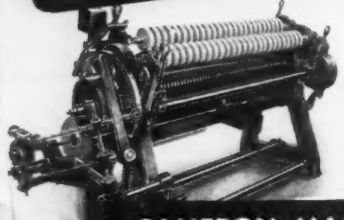
MOUNT HOLLY, N. C.
Mr. Edwin Hutchinson
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

CAMACHINE 26-3A

There's a CAMACHINE for YOU!



CONVERTS WIDE VARIETY OF FABRICS INTO

NARROW ROLLS

•

ACCURATE DIMENSIONS, UNIFORM WINDING AND CLEAN-CUT EDGES

•

WRITE FOR DETAILS

CAMERON MACHINE COMPANY
61 POPLAR STREET, BROOKLYN 2, N. Y.
MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

INDUSTRIAL ENGINEERS

Specializing in

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

RALPH E. LOPER CO.

COST SYSTEMS — WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS — SPECIAL REPORTS

GREENVILLE S.C. — FALL RIVER, MASS.

manager and director of market and product research for American Thread Co., New York, has been named general manager of the industrial sales division.

Dwight B. Billings, controller of Pacific Mills, Boston, Mass., and **Elton B. Pomeroy**, of Everlastik Inc., Chelsea, Mass., have been chosen directors of the Boston Control of the Controllers Institute of America.

Paul T. Hotchkiss, representative on the Pacific coast for Berkshire Knitting Mills for the last 10 years has resigned, effective Dec. 1, to join Texas Hosiery Co., of Dallas, Tex., as a partner with **Robert H. Ruff.**

W. M. Webster, who has been associated with Cutter Mfg. Co., Rock Hill, S. C., for the last 13 years, has resigned as sales manager.

Robt. W. Dugan, formerly with Lima Woolen Mills, Lima, Ohio, has been appointed superintendent of the Pendleton Woolen Mills, Pendleton, Ore.

Richard H. Dodge, formerly with Montrose Worsted Co. and at one time with American Woolen Co., has returned to the latter firm.

Richard H. Davis, son of and assistant to the late O. H. Davis, treasurer and sales manager of Seneca Knitting Mills, Inc., Seneca Falls, N. Y., has resigned from the company.

Ben Blackman has formed Blackman Fabrics Corp., rayon converters, with offices and showrooms at 1441 Broadway, New York.

William A. Newell, Jewett City, Conn., now on terminal leave from the Army, plans to resume his textile studies at North Carolina State College in December.

Alvin Sheerr, following three years service in the Navy as lieutenant, has resumed his duties as supervising head of Arms Textile Co., Manchester, N. H., an affiliate of Philip Sheerr & Sons, Philadelphia, Pa.

Ward H. Bushee, formerly assistant agent of American Thread Co. mills in Holyoke, Mass., has been named general superintendent of a new yarn mill in Prattville, Ala. Mr. Bushee, recently discharged from the Navy with the rank of lieutenant, was superintendent of the Bay State Thread Co. in Springfield, prior to the war.

Howard J. Revell, for 15 years superintendent of the Glasgo Finishing Co., Glasgo, Conn., has resigned to become assistant general manager of Warren Print Works, Bondsville, Mass.

Robert McKowan, formerly of Ware Shoals, S. C., has become general superintendent of the Kerr Bleaching & Finishing Works, Concord, N. C., succeeding **J. T. Yates**, who has been given an indefinite leave of absence due to ill health.

Donald J. Eccleston and Arthur F. McLean have been appointed assistant general manager and superintendent, and technical director, respectively, at the Glasgo Finishing Co., Glasgo, Conn.

Charles I. Pierce is now designer with Jamestown Worsted Mills Co., Jamestown, N. Y. Mr. Pierce was at one time with the old Standish Worsted Co.

Nat Streitfeld has become stylist and promotion man for Albert H. Vandam Co., sales agents for Hampton Co., East Hampton, Mass.

C. L. Miller, Jr., is now superintendent of Locke Cotton Mills, Concord, N. C., having been promoted to this position.

Frank Petrea is now superintendent of Stonewall Cotton Mills, Inc., Stonewall, Miss. He was formerly of Greensboro, N. C.

W. F. Howard, Jr., has succeeded his father, the late W. F. Howard, as superintendent of the Pacific Mills' cotton department at Lyman, S. C. He has been assistant superintendent at the company's Granby plant at Columbia, S. C., since last February.

Louis Rioles has been recently promoted to superintendent of the Cooper-Kenworthy Co., Providence, R. I.

Your Standard Specification for Silicates

STANDARD

INSURES SATISFACTION

ALKALI

DIAMOND ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N.Y. · MARSEILLES
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RAPIDASE

for de-sizing cottons, rayons and mixed goods

Assures rapid, dependable de-sizing
Our technical staff always at your service.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE • NEW YORK

D. R. KENYON & SON
RARITAN, N. J.

MACHINERY
TENTERING
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ROME SOAP MFG. CO.

WRITE US FOR SAMPLES AND QUOTATIONS

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

ALL STEEL ECONOMY BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.
ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.
REPRESENTATIVES:
New York Office: 100 Gold St.
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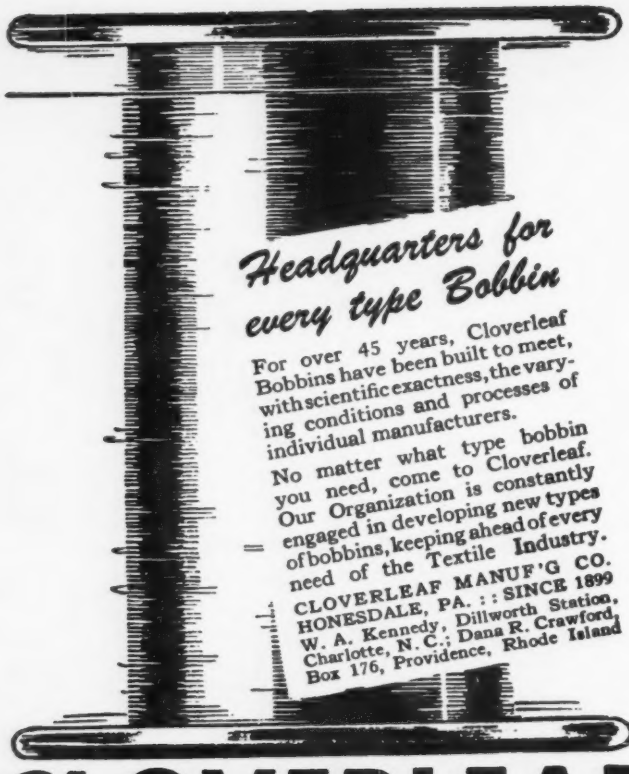
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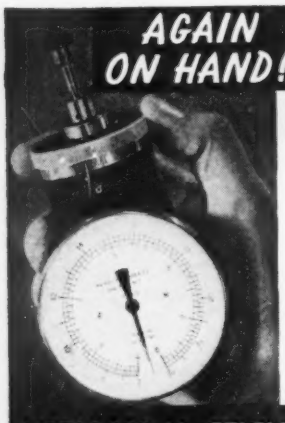
For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.
No matter what type bobbin you need, come to Cloverleaf. Our Organization is constantly engaged in developing new types of bobbins, keeping ahead of every need of the Textile Industry.
CLOVERLEAF MANUF'G CO.
HONESDALE, PA. : : SINCE 1899
W. A. Kennedy, Dillworth Station, Charlotte, N. C.; Dana R. Crawford, Box 176, Providence, Rhode Island

CLOVERLEAF
Bobbins . . . . . .



IMPORTED SWISS FIVE RANGE
HAND TACHOMETERS
CENTRIFUGAL TYPE

CATALOG No. 303	CATALOG No. 346
30— 120 RPM	120— 480 RPM
100— 400 RPM	400— 1600 RPM
300—1200 RPM	1200— 4800 RPM
1000—4000 RPM	4000—16,000 RPM
3000—12,000 RPM	12,000—48,000 RPM

FOR DETAILS WRITE FOR BULLETIN NO. 750. NO PRIORITY REQUIRED

HERMAN H. STICHT CO., INC. 27 PARK PLACE NEW YORK 7, N. Y.

NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

Obituary

Jesse Metcalf, 58, who until retirement was associated with Metcalf Bros. in New York, selling agency for Wanskuck Co., died Oct. 17.

Henry C. Folk, 86, one of the founders and a director of Bamberg Cotton Mill, Bamberg, S. C., died Nov. 6.

Eugene F. Donnelly, 81, owner and co-founder of the Anderson & Donnelly Co., Boston, Mass., wool house, died on Nov. 6.

Joseph Lomax, 85, who established the Joseph Lomax Co. carpet mills in 1893 and retired from active business in 1937, died in Philadelphia recently.

Arthur C. Jones, 70, president of Ruby Cotton Mills, Gastonia, N. C., died Nov. 17.

John Graham Melville, 56, co-partner of Melville Woolen Co., Sykesville, Md., died recently.

Max Satinsky, 69, president of the Frankford Worsted Mills, Philadelphia, died recently in Mt. Sinai Hospital.

William F. Cowen, 73, former assistant manager of United Lace & Braid Co., Coventry and later Auburn, R. I., and in 1915 a founder and part owner of the Cowen Braid Co., Inc., died recently. He retired from manufacturing in 1928.

Alexander H. Stone, owner of Stone Wool Co., Woonsocket, R. I., died at Anderson, S. C. recently, while on a business trip.

William H. Folwell, 69, Philadelphia, Pa., died Nov. 12. He had long been associated with Folwell Bros. & Co., Philadelphia, of which his father was one of the founders during the civil war.

Frank Goldberg, 66, Bessemer City, N. C., president of Stevdan Textile Mills Co., and Algodon Mfg. Co., both of Bessemer City, died Nov. 20.

James A. Campbell, 62, for a number of years supervising engineer of the American Woolen Co., Boston, Mass., died recently.

Thomas Nixon Van Dyke, 82, Chattanooga, Tenn., retired treasurer and general manager of the Richman Spinning Co., and the Chickamauga Knitting Mills, died Nov. 10.

Thomas Edmunds Marshall, 69, Rocky Mount, N. C., who had been connected with the Rocky Mount Mills since 1915 in different capacities and since April, 1940, as secretary, died Nov. 13.

Andre Claude Roux, 62, superintendent and manager of Velvet Textile Co., West Haven, Conn., died Nov. 4. For 28 years previous to his last connection, he was superintendent of the Rossie Velvet Co., Willimantic.

Frank C. Angle, 45, manager of the general machinery division field sales offices, Allis-Chalmers Mfg. Co., Milwaukee, Wis., died Oct. 25. He joined Allis-Chalmers in 1920 as a salesman in the Chicago office.

James Joseph Duncan, 58, Belmont, N. C., for many years superintendent of Acme Spinning Co., and prior to that associated with Linebarger-Stowe Mills, died Nov. 3.

Henry Zecha, 72, treasurer and manager of Artistic Web Co., Pittsfield, N. H., died Nov. 9. He was a native of Austria and founded the textile concern with his brothers 42 years ago.

Lewis S. Richards, superintendent of New England Bobbin & Shuttle Co., Nashua, N. H., and overseas veteran of World War I, died in Nashua on Nov. 11.

Frank L. Clarke, 76, who retired in 1931 as chief electrical engineer of the Amoskeag Mfg. Co., Manchester, N. H., died in a Manchester hospital, Nov. 13. He installed the first electrical equipment in the old Manchester Mills.

Nelson A. Fisher, Mid-West representative of Burkart-Schier Chemical Co., Chattanooga, Tenn., died Nov. 4.

On your machines and processes

THOMPSON

KWIXSET *Automatic*

TIME-LIMIT SWITCHES

Save Operator's Time . . .

Save Losses from Spoilage . . .

Save Cost of Complex Controls

Operators can always tell the moment "time's up" . . . without watching the machine or the clock. All they do is set the pointer-handle to the desired time-interval. This winds the spring-motor, turns off the red light. Then, when the time has elapsed, light flashes on again.

Kwixsets are available with 7 different dials which provide a time-range from 5 seconds to 24 hours. For recommendations and prices, state nature of your work and time-accuracy required.

Easily connected to 125-volt circuit, AC or DC, any cycle.

H. C. THOMPSON CLOCK CO.

BRISTOL, CONNECTICUT

FINISHING OR DYEING PRODUCTION MAN

We have an opening for a man who has had experience in the finishing or dyeing field. He is either a foreman, or has the qualifications for a foreman. He may be presently employed in a cotton mill or textile plant. This is a wonderful opportunity to work into a splendid position. Excellent opportunity for advancement. Ideal working conditions in modern, well-equipped plant. Write fully, giving background and experience. All correspondence will be treated confidentially.

WRITE PERSONNEL DEPARTMENT

AMERICAN FINISHING COMPANY

Memphis, Tenn.

SYNTHETIC YARN AND FABRIC DEVELOPMENT

Synthetic yarn and fabric development man for merchandising organization located in Midwest. Should have textile training and 10 years practical production experience with manufacturers producing and processing synthetic yarn and fabrics; also, dyeing and finishing same.

P-486, Textile World
520 North Michigan Ave., Chicago 11, Ill.

What? Painting again!

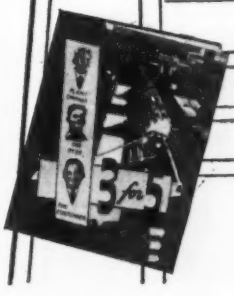
If you want to know why your dye-house walls and ceiling need painting so often, look at your open-type dye boxes. Escaping steam and chemical vapors condense on the walls, cause peeling and cracking, raise maintenance costs.

Now that Blickman fully-enclosed stainless steel dye boxes are available again — you can end the expense and trouble of too frequent painting and achieve *all* the other savings that come from really modern equipment.

Blickman fully-enclosed dye boxes stop dye-house fog, assure level dyeing, clean thoroughly with a quick rinse. Send for further information.

Send for Folder

"3 for 5" showing Blickman stainless steel dyeing equipment for a new high in postwar production.



S. BLICKMAN, INC

412 GREGORY AVENUE, WEEHAWKEN, N. J.

Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, hoods and tanks.

HOME for them!

and the HOME STRETCH for YOU!

You still have time! In December, your employees' allotments to the Victory Loan through your company's Payroll Savings Plan offer a final chance to help speed the proud homecoming of our fighting men—and do all in medical power for our hospitalized heroes!

Make December a plantwide TOP-THE-QUOTA drive! Now's the time to spotlight your Payroll Savings Plan—and "brief" your Bond-selling organization for fast, last minute action!

***Resolicit every employee to buy the* New F.D.R. Memorial $200 Bond**

The new Franklin Delano Roosevelt $200 Bond—better than actual cash because it earns interest—is a strong building stone toward the secure future of every employee-purchaser!

From now 'til the New Year—with plant rallies, interdepartmental contests and resolicitation—keep Payroll Savings Plan Bond-buying at a new Victory Loan high! Buying a Victory Bond is the best way of saying "Welcome Home" to our returning veterans! Also an active aid in assuring prosperity to your nation, your employees—and your own industry!

VICTORY LOAN

The Treasury Department acknowledges with appreciation the publication of this message by

TEXTILE WORLD

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and War Advertising Council

SEARCHLIGHT SECTION

WANTED

OVERSEER

for

PICKING, CARDING, SPINNING

Mill in Eastern New York State, 6 sets of cards, making coarse carpet yarns. Give full particulars. Write

P-481, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Seaming & Looping
FIXER

Excellent opening for experienced man

Permanent job with good salary

Write **P-487,** Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

Textile Chemists and Engineers

by large Eastern manufacturer of synthetic fibers. Men with 5 or more years experience in the industry are wanted for work in one of our large plants in the Middle Atlantic States. Please give complete record of experience and salary requirements in applying.

P-485, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
PRODUCTION SUPERINTENDENT

Established firm entering coating field requires services of production superintendent with thorough knowledge of plastic—Vinyl—Pyroxilyn coating (Knife method). Excellent opportunity. Replies will be treated in the strictest confidence.

P-435, Textile World
520 North Michigan Ave., Chicago 11, Ill.

POSITIONS VACANT

KNITTER AND Mechanic thoroughly experienced all types flat full automatic knitting machines. Able to knit in test and set up. Salary and bonus, opportunity. Apply Ainslie Knitting Machine Co., Inc., 750 Grand Street, Brooklyn, N. Y.

WANTED PLANT Manager and designer—piece-dyed men's and women's wear. 100 looms, mill situated in Canada. State technical and moral qualifications. Knowledge French language. Salary wanted. Apply P-452, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

GENERAL SUPERINTENDENT: thoroughly experienced in the manufacture of labels, ribbons, tapes and webbing, would like to connect with an organization who can use his services. A-1 references. PW-497, Textile World, 330 W. 42nd St., New York 18, N. Y.

IF YOU can use a man who has a thorough knowledge of the textile manufacturing business and who has a degree as Industrial Textile Engineer and Technologist, one who knows job incentive, evaluation, plant layout and maintenance, the manufacture of all types of woven fabrics, I would appreciate an appointment with you. PW-498, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 252)

TEXTILE ENGINEERS

For development work in yarns and fabrics (natural and synthetic). Degree from a textile engineering school required. Experience in textile field is desirable. Work in Northern New Jersey. Write stating age, experience and salary expected.

P-469, Textile World
330 West 42nd St., New York 18, N. Y.

EXPORT POSITION

New York export house specializing in textile machinery has position open for young man with some experience in office routine and knowledge of textile machinery. Permanent position with good pay and excellent possibilities for advancement for right man. Written application with full information to

P-471, Textile World
330 West 42nd St., New York 18, N. Y.

DYEING AND FINISHING EXECUTIVE

Thoroughly experienced in plant management, processing and production, full knowledge of all equipment and its operation, desires new contact where knowledge and ability can be used to full advantage. Interested in new projects or reorganization of present set-ups.

PW-484, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Experienced fixers who know 400 N. S. & W. Spiral machines and can train operators. Union shop. Good working conditions. Well established mill with nation wide business.

P-488, Textile World
520 North Michigan Ave., Chicago 11, Ill.

MALE HELP WANTED

Mechanic Experienced Wildman Spring Needle Machines. Highest Wages. Steady Work. Write Stating Experience.

P-476, Textile World
330 West. 42nd St., New York 18, N. Y.

WANTED

Production Manager

South Carolina cotton rug manufacturer has opening for dynamic production director; must be capable running entire operation on his own; the man we are seeking is a top flight personnel man, possesses the ability to think and act creatively and has the 'know-how' to do an effective mass production job; compensation will be based on performance; write full details, age, education, complete experience picture; all information will be held confidential.

P-472, Textile World
330 West 42nd St., New York 18, N. Y.

PRODUCTION OR RESEARCH EXPERT

Seeks position in rayon producing or throwing plant.

15 years experience, supervision, development, waste control, quality control, incentive plans, job simplification, some time study.

PW-464, Textile World
330 West 42nd St., New York 18, N. Y.

Mechanic Experienced Scott & Williams Rib Machines. Highest Wages. Steady Work. Write Stating Experience.

P-477, Textile World
330 West. 42nd St., New York 18, N. Y.

Production & Sales Executive Desires Change

Highly capable in manufacturing Rayon Broad goods & Ribbons, Jacquard Bedspreads, Draperies and Upholstering Fabrics, including dyeing & Finishing. Thorough knowledge of cloth construction, costing, planning and Time study. Textile Graduate desires Manager or General Superintendent.

PW-429, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

INDUSTRIAL ENGINEER

With textile experience for medium size mill in central Massachusetts.

P-475, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Worsted yarn superintendent. One who fully understands worsted spinning machinery and manufacturing and is exceptionally familiar with gilling, drawing, spinning, and twisting. We do not make our own top. Write full details, experience, age, salary, etc.

P-491, Tex. World, 330 W. 42 St., New York 18, N.Y.

CHEMISTS

Active, Confidential Service Both To Employer and Employees
We Invite Your Investigation
MISS GLADYS HUNTING—Counselor
Shay Employment Agency
30 W. Washington Chicago 2, Ill.

THERE ARE MANY ATTRACTIVE OPENINGS IN MILLS

In all sections of the United States and Canada. If you are seeking employment, write us fully regarding your experience and position desired; we will inform you of positions now open in your line of work.

CHARLES P. RAYMOND SERVICE, Inc.
294 WASHINGTON STREET BOSTON 8, MASS.
Over 45 years' confidential employment service for men seeking positions and employers seeking men.

(Additional Employment Advertising on page 252)

POSITIONS WANTED
(Continued from page 251)

30 YEARS experience of narrow fabric looms. Can make my own drafts, will go anywhere, South or West. PW-499, Textile World, 330 W. 42nd St., New Yerk 18, N. Y.

WOOLBUYER, TOPMAKER and Comber (Noble Combs) well experienced in Colonial and South American Wools seeks engagement, also interested in any Latin-American combing project. Particulars to PW-500, Textile World, 330 W. 42nd St., New York 18, N. Y.

BUSINESS OPPORTUNITIES

HIGHLY CAPABLE rayon and silk throwster, well experienced in throwing for the dress goods, hosiery, underwear, embroidery and novelty yarn trade, desires to contact individual or group financially interested in establishing a throwing plant. Good results guaranteed, excellent references. BO-416, Textile World, 330 W. 42nd St., New York 18, N. Y.

A FRENCH Trader, "Textile Negoce", established 1850, is looking for trade agreements with manufacturer in all textile articles, wool, woolen goods, linen, hosiery, nylon, in view of distributing and selling them in France, with eventually exclusivity; would accept a partnership. Write BO-502, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED

COMMISSION HOSIERY dyehouse wishes to lease or purchase—dyehouse building with ample water and steam for production of 10,000 lbs. daily. In Phila. area. W-417, Textile World, 330 W. 42nd St., New York 18, N. Y.

SELLING OPPORTUNITIES
OFFERED—WANTED

Selling Agencies—Sales Executives
Salesmen—Additional Lines

OFFERED

CHEMICAL SALESMEN to sell textile specialties in New England, Manhattan, and Southern districts. SW-501, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED

A FRENCH trader, "Textile Negoce", established 1850, is looking for trade agreements with manufacturer in all textile articles, in particular canvases, linen materials, working clothes, specialty, with exclusivity, in view of direct selling, on commission, main agency. Write RA-503, Textile World, 330 W. 42nd St., New York 18, N. Y.

ARGENTINE WOOL merchant wants relations to export. A. Zipdjian, Gorriti, 4349 Buenos Aires, Argentina.

POSITION VACANT
SALESMAN—TECHNICIAN

To call on textile mills to sell and demonstrate chemical products. Must be familiar with manufacture and finishing of cotton and mixed goods. Prefer chemical or chemical engineering training or graduate of textile school. Salary would depend on qulifications and experience. State full particulars as to age, family status, education and experience.

SW-505, Textile World,
330 West 42nd St., New York 18, N. Y.

TO RIBBON & NARROW FABRIC MANUFACTURERS

SALES AGENT offers excellent **REPRESENTATION** on all types of ribbons and narrow fabrics to many trades. Can style and develop new numbers and products. Highest recommendation.

RA-478, Textile World
330 West 42nd St., New York 18, N. Y.

Textile Sales Organization

Well known sales organization with showrooms in principal cities, and extensive selling force, has opening for representation for manufacturers of textiles, plastic coated fabrics, tapes, webbing, knitting yarn, felt or nylon fabrics. Has excellent standing with department stores, mail order houses, furniture manufacturers, men's, women's and children's sportswear manufacturers, shoe manufacturers, automobile manufacturers and the airplane industry. Willing to assume complete selling job for any size manufacturer. Write our advertising agency—

Bresnick and Solomont
216 Tremont St. Boston 16, Mass.

REPRESENTATION

for Manufacturers & Dealers of Machinery & Acc. New & Sec. Hand

IN PALESTINE

by well-connected expert

GEORGE M. WODAK

Textile Supply & Engineering
Tel. Aviv, 30, Ahad Haam Str. Room 14
POB 1106, Cables: Wodmatex Telaviv.

VENEZUELAN

From long-established sales organization actively covering entire country, seeking exclusive representation of first-class American manufacturer for immediate possibilities or for later development. First-class references. Manager at present in New York, will discuss matter personally.

Please write

RA-467, Textile World
330 West 42nd St., New York 18, N. Y.

ITALY AND BALKANS

Leading European Textile Agents desire to represent Manufacturers of Textile machines and accessories of all kind for Textile and Hosiery Industries. Also Chemical Products and new patents for same industries.

RA-466, Textile World
330 West 42nd St., New York 18, N. Y.

BE PREPARED
for
NEW EXPORT SALES
Wanted Textile Agencies

Well connected and old established Manufacturers Agents having unrivalled connections with wholesale warehouses in Great Britain are prepared to accept representation of first class Manufacturers of Men's, Women's and Children Hosiery underwear and General Textiles.

C. CLUTTEN & SON
Textile Exchange Buildings
St. Paul's Churchyard, London, E. C. 4

MEXICO

Mexican firm well connected with textile mills is interested in the representation of textile machine factory and accessories. Reply to:

RA-462, Textile World
330 West 42nd St., New York 18, N. Y.

SWISS TEXTILE IMPORTER
takes over
Sole-agency for Switzerland

for cotton and knitting yarns, cotton underwear as also textile fabrics and finished goods. Interested parties write to

RA-460, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED COMMISSION DYEING

Have additional facilities for 10,000 to 15,000 lbs. weekly for raw stock dyeing. Can make good deliveries.—Apply

CW-433, Textile World
330 West 42nd St., New York 18, N. Y.

YARNS WANTED

Wanted to purchase surplus yarns of all types—cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-474, Textile World
330 West 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorney

Booklet—"General Information Concerning Inventions & Patents" and "Fee Schedules" sent without obligation.

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Consulting Engineers
Industrial Power Surveys—Electric, Steam, Water, Air Layouts—Heating & Ventilating—Special Electric Circuits—Plant Modernization—Reconversion & Alterations—Power Surveys — Investigations & Reports.

SEND FOR PROSPECTUS
154 Nassau St. New York, N. Y.

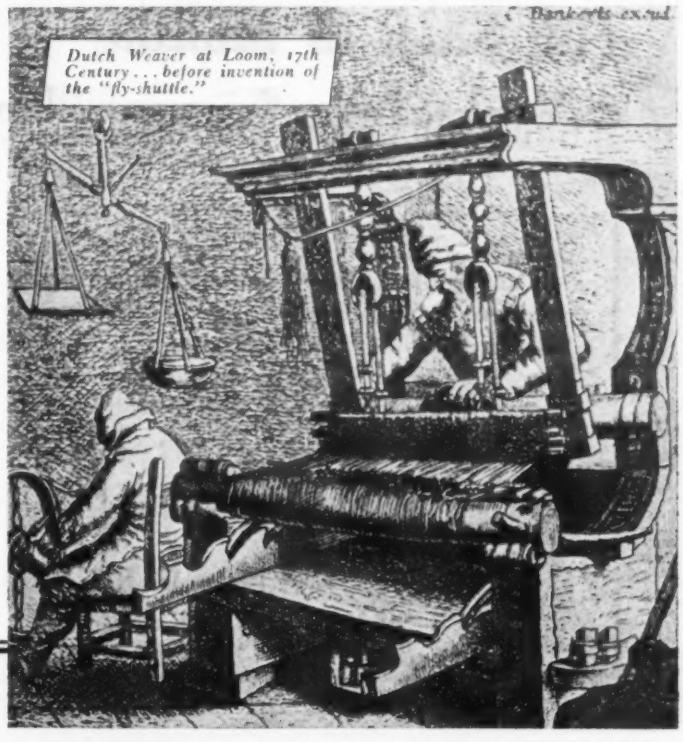
SEYMOUR C. HYMAN, Chem. Eng.
Consultant for Industry on
MOISTURE AND FUNGUS PROBLEMS
For the duration of the war, Chief of Moisture and Fungus Proofing Section developing and applying tropic-proof materials for U. S. Army communications equipment. Now available to manufacturers and materials suppliers for consultation on protective coatings, insulation and choice of engineering materials.
P.O. Box 111 Long Branch, N. J.

(Business Opportunity & Wanted Advertising—page 260)

The man who invented the "fly shuttle" *had to flee!*

PROBABLY the first invention to revolutionize the textile industry was the fly-shuttle for weaving, patented 1733, by John Kay. It was called the fly-shuttle because of its speedy operation. It improved cloth quality, lightened labor, doubled output. Weavers of that day broke into Kay's home, demolished equipment. Kay had to be smuggled out in a sheet to save his life. Kay's spinning machine, too, was regarded as "a very dangerous piece of furniture." Kay fled to France and died in want—but his inventions, modified, are in use today.

Illustration from the Bettman Archive



Dutch Weaver at Loom, 17th Century . . . before invention of the "fly-shuttle."

SERVING THE TEXTILE INDUSTRY

1—114" Simpson Batcher
2—#00 Sturtevant Blowers, paddle type, belt driven
1—66½" C & M Brushing Machine
3—2-46", 1-50" Button Breakers
1—48" Breast Card, with Cyl. 6 rolls
1—66" Hartman Card, 2 Cyl. iron card set with tape condenser and feeder, no clothing
1—42" Granger Calendar, 3 roll, motor driven
8—Whitin Model C Combers)
1—Whitin Model C Ribbon Lapper)
1—Whitin Model C Sliver Lapper)
1—Whitin Ribbon Lapper
1—Whitin Sliver Lapper
1—72" Kenyon 2-bowl Crab
1—#25 Foster 200 Spindle Doubler
4—48" P&W Doubling, Boarding & Winding Doublers
1—66" P&W Doubling & Winding Machine, Rebuilt, with 100 yd. Counter, motor driven
1—65" P&W Doubling & Winding Machine, Rebuilt, with 100 yd. Counter, motor driven
2—80" P&W Doubling Winding & Measuring, Belt Driven
1—94" P&W Doubling Winding & Measuring, Belt Driven
1—72" Schofield Automatic Duster, no apron, no fan
1—28" Tolhurst Extractor, Belt Driven, Overhauled
1—30" American Laundry Extractor, Copper Tinned Basket, Belt Driven, Under Drive
1—40" Cleveland Extractor, Self-balancing, Copper Basket, Top Pulley Drive
1—60" Broadbent Extractor, Self-balancing, Copper Basket, Belt Driven
1—Narrow Fabric 5 Can Van Vlaanderen Finishing Machine with Taylor Instruments
1—40", 42", 46", 48", 50", 100" C&M and E&H Folding Machines
1—Hunter and Schiffer 2 String Fulling Mills
1—48" S&F Single Cylinder Garnett, 20" dia. Cyl. 16" Doffer, Gear Driven
1—40", 45", 52", 54", 58", 90" Card & Napper Grinding with and without Floor Stands
1—124" Roy Napper Grinder
1—Belt Lacing Peerless Machines
1—Card Lacing Singer Machine ⅛ H.P. GE Ind. Motor
1—48" C&K 4x4 Box Loom
1—76" Draper Modified D Automatic Looms with Lacey tops, Belt Driven, equipped with Midget Feelers, Friction Let Off, Warp Stop Motions and 1⅛ Beams per Loom

FOR SALE
Complete Wool Scouring & Carbonizing Plant
Including

1—40" 2-Cyl. Wool Opener.
2—Units of Dusters, each with automatic feeder and two cone dusters connected in tandem.
1—48" Sargent 4-bowl wool scourer with Automatic feeder. Bowls 32', 24', 20' & 20' long.
1—48" Hunter 4-bowl wool scourer, with automatic feeder. Bowls 32', 24', 16' & 24' long.
2—80 ft. Philadelphia Textile Machiney Co. Stock Dryers, each with automatic feeder and ten circulating fans.
1—48" 2-bowl carbonizer with automatic feeder. Bowls wood 36' & 20' long.
1—Crush Roll and Dusting Unit consisting of Automatic feeder, crush rolls, cone duster, crush rolls and Belgian Duster in tandem.
2—Bagging Machines, Sargent & Dodge.
1—Hydraulic Baling Press.
1—Permutit Water Softener.
Also Miscellaneous Belt Conveyors, Blowers, Ducts, Spare parts, trucks, etc.

18—76" C&K 4x4 Box Looms, Belt Driven
3—82" C&K 4x4 Box Looms, 25 Harness, Belt Driven
8—92" Knowles 4x4 Box Looms, 25 Harness, Intermediate Head, Belt Driven, T&L Pulley & F. C. Drives
4—92" C&K 4x4 Box Looms, 25 Harness, Intermediate Head, Belt Driven
1—42" C&M Measuring Machine, 60 yd. Dial, Belt Driven

1—58" Baker Measuring Machine, Sanded Roll Fabric Measuring, Inspecting & Winding Machine with yardage dial, tuber and collapsible roll-up attachment, motor drive
3—240 Spindle D&F Mules, 2 Ga.
1—D&F Napper 20 roll single acting Napper, Belt Driven
1—40" Parkhurst Burr Picker
9—65½", 66", 80" and 84" Voelker and Gessner single & double bed rotary cloth Presses
1—86" x 42½" Cleveland Reel Warp
1—60" C&M Single Blade Shear, Plush, arranged for motor drive, no motor
2—66½" P&W Single Blade Shears, Belt Driven
1—66" C&M 2-Blade Shear, Belt Driven
12—66" P&W 2-Blade Shears, Belt Driven, Model B
3—66" P&W 2-Blade Shears, Belt Driven, Model A
1—72" Montsforte 2-Blade Shear
1—106" Schulze Double Shear
1—42" C&M Singer with Hood
2—204 Sp. Lowell 2¼" R, 3" Ga. Spinners, Band Driven, Warp Wind
1—32" D&F Jack Spooler
1—100 Sp. Draper Spooler with Foster Tension, McCall Guide
1—60" C&M Single Brush Tiger, arranged for Motor Drive, no motor
1—200 Sp. Lowell Trap Twister, 3½" Ring, 5" Ga. arranged for Chain Motor Drive, no motor
1—200 Sp. Draper Twister Tape Dr. 2¼" Ring, 3⅛" Ga.
8—100 Sp. Saco-Lowell and Lowell Trap Twisters, 3¼" Ring, 5" Ga. arranged for Chain Motor Drive, no motor
1—Washing Tub Agitator with motor
2—54" Entwistle Warpers
8—82", 87", 92", 100" D&F Warpers with Creel Beamer and Reed Stand
1—Card Clothing Winch
1—46" Winding, Boarding and Tubing Machine
1—54" P&W Winding and Measuring Machine with 100 yd. Clock with Motor
2—58" P&W Winders, Edge, Stencilling & Winding
1—64" P&W Woolen Cloth Winder and Measuring Machine
2—Yarn Conditioning Machines, Sargent
1—#15533 Reeves Drive, Size 6, Class G, Range 3 to 1
1—#16653 Reeves Drive, Size 3, Class A, Range 10 to 1
Quantity of Mule Bobbins and Various Size Twister Bobbins and Wooden Spools
1—100 yd. Heathcote Dryer, 66" opening, return tenter drive with electric guides, motor driven

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street — NEW YORK 18, N. Y.

DOMESTIC — TELEPHONE PEnnsylvania 6-8014 — EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

FOR SALE IN MEXICO

A Complete Cotton Spinning & Weaving Mill

CONSISTING OF:

2600 Spindle Spinning Unit; 100 Draper Automatic Looms; Finishing Machinery; mill equipped to work synthetic fibres; building complete with water turbine, light and power, 80% net profits; 14 acres of land, orchard, located 6 miles from city, also near cotton growing area, excellent climate.

For details contact H. C Motley, President

J. H. WINDLE & COMPANY

231 So. Main St. *Tel. Gaspee 6464* *Providence 3, R. I.*

FOR SALE

BTS

2 E&H Folders, for Rayon, 40" & 46"
1 Granger 94" Padder, screw set.
1 48 can Hor. Dryer 94" face & 3 Ver.
6 can Dryers 94". Copper & steel cans.
3 steel tanks with agitators, 650 gal., 500 gal. and 100 gal.
2 150 gal. Lron, steam jacketed tanks with agitators.
2 2500 gal. steel storage tanks.
Motors, variable speed drives and pumps for above equipment.

BOBBINS — SPOOLS — SKEWERS — SUPPLIES, etc.

Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.

220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE!

12—Saco-Lowell 3" Ring Twisters, 1938
4—Parks & Woolson 48" Tubers
1—7 bowl 66" Woolen Cloth Scourer
6—SS Dye Jigs, 50" Beam Rolls
1—set 27 Tinned Iron Dry Cans 23"x144" face
1—Textile 2 roll 58" face Calender

JAMES E. FITZGERALD

Textile Machinery

10 Purchase Street — Fall River, Mass.

TEXTILE AUXILIARIES

FOR IMMEDIATE DELIVERY FROM OUR OWN STOCK

2—100 HP Motors 400 & 440 V. 2 Phase 600 RPM.
1—75 HP 440 Volts 2 Phase—690 RPM.
1—50" Sprinkler
1—66" Brusher 3 Tampico Brushes—5 Wire
1—30" Warp Chain Dryer with 7½ HP Motor
1—B & B Baling Press
2—E & H Folder 48 & 50" Wide
6—50" Jigs Wood Tubs
3—50" Jigs All Stainless Steel
1—125 HP Harris-Corliss Steam Engine
1—50" Gessner Apron Press
1—54" Embossing Calender (Hydraulic)
2—44" Shreiner Calenders (Hydraulic)
3—36" Hydro-Extractors
1—Frosp. Steam Press
1—Singer Sewing Machine 47W 120
1—84" Loop Dryer 32' long
1—66" SANDING & BRUSHING MACHINE
1—66" 2 Blade Shear
1—20 roll Woonsocket Napper (S.A.) 66"
1—44" 2 Color PRINTING MACHINE
1—3 roll Color Mill
1—18-can set 50" Butterworth steel tinned. Reconditioned.

TEL. DEXTER 9650 — 1128 N. MAIN ST.

PROVIDENCE, R. I.

SURPLUS MACHINERY LIST

WHITIN QUILLING MACHINE

304 Spindle—3½" Gauge—10½" Traverse. Model J

ITEM 11001

1 COMPLETE BACK WASHING UNIT

ITEM 11001-A

BACK WASHER

1—set of 2 bowls, 33" wide x 7' 4" long inside measurement x 14" deep.
2—set Nip Rolls—11" dia. x 28" face in #1 & #2 bowl
1—Nip Roll #2 bowl—13" dia. x 28" face, Upper roll Rubber covered. Lower roll Brass
3—brass Nip Rolls 5" dia. x 28" face in each bowl

ITEM 11001-B

BACK WASHER DRYER

Taylor Wadsworth & Co., Lt'd., 9 cylinder—41" C side x 11' 10" long x 7' 6" high containing 9, 23½"dia. x 31" dryer drums
5—pair glass panelled doors & 1 hatch door in top slope.

ITEM 11001-C

DOUBLE HEAD BALLING GILL BOX

C. & A. 6' 8" wide x 5' 6" long
Above trains of three—all belt & Chain driven by 25 H.P. G.E. Motor, 900 R.P.M.

ITEM 9793

1 CURTIS & MARBLE SHEAR

66 in. (Belt Driven) Single Cylinder

Collins & Aikman Corp.

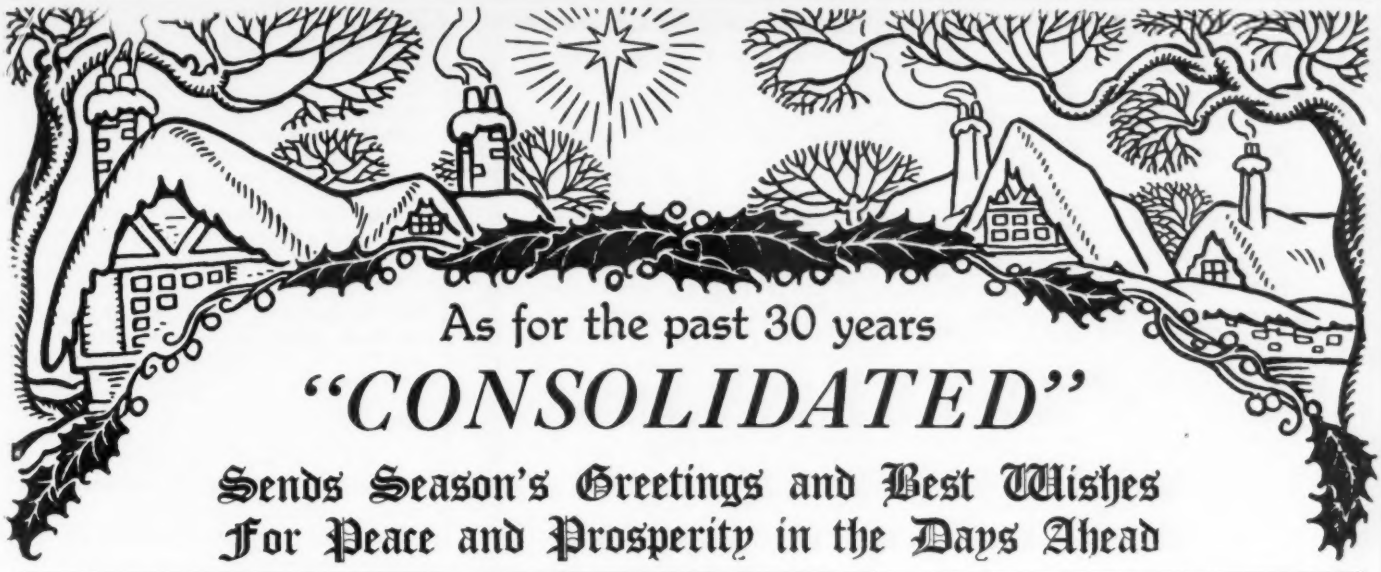
SALES & SALVAGE DIVISION
Located at Our Plant "L"
6th & Upland Aves.
Upland, Delaware Co., Pa.
Phone - CHESTER 4167

FOR SALE

3—18" Clark Rag or Shoddy Pickers
2—40' C & M Parkhurst Burr Pickers
7—Jack Spoolers, 40 ends
15—#90 Universal Winders
20—#50 Universal Winders
3—#30 Foster Coners with Worste Skein supply
1—#21 A Foster Tuber
60,000—4x6 and 4½x6" Spools
300 Jack Spools 32⅛" between heads
3—120" C & K, 4x4 box, 25 Har. Loo
12—92" C & K, 4x4 box, 25 Har. Loo
2—P & W 66" Double Shears
1—66" Voelker D B Press
1—Voelker 80" D B Press
1—Set Rubber Squeeze Rolls, 14" fa
2—90" 20 roll D & F S.A. Nappers

FRANK W. WHEELER CO

1837 E. Ruan St. Phila. 24, Pen



As for the past 30 years

"CONSOLIDATED"

Sends Season's Greetings and Best Wishes For Peace and Prosperity in the Days Ahead

EXTRACTORS

4—K & G & Burkhardt 60" Extractors, rubber baskets.
1—Hercules 48" Extractor, copper basket.
3—26" & 30" Hercules Extractors.

DYEING MACHINES

1—Obermaier Yarns Dyer.
5—K & W & Giles Skein Dyers.
2—Buhlman 100-arm skein dyers.
2—Haveg Totally enclosed Dye Becks.
3—Rotary 2 & 3 Comp. Monel Dyers.
12—Franklin Cast Iron Pkg. Dyers, 6-600#.

DRYERS

3—P & S & National Loop Dryers.
1—P & S Raw Stock Dryer, automatic feed.
3—Skein Truck Dryers.
1—V. V. 5-section Net Dryer, complete with fans.
1—Pin Tenter Dryer, 64".
1—Riggs & Lombard Cloth Dryer.
2—P & S Hurricane Dryers.
2—3-Apron Conveyor Dryers.

NAPPERS

2—D & F Single Acting Nappers, 60" & 84".
3—Gessner & Woonsocket S. A. Nappers, 84"-90".

TENTER FRAMES

2—Textile Fin. & Butterworth Tenters, top opening clips, 60' & 90'
1—Heathcote Pin Tenters, 30'-50" wd.

KIERS

2—Textile Kiers, 9'-6" x 11'-9".

PALMERS-PALMER QUETCH UNITS

2—Butterworth & Textile 60" & 80" Palmers.
1—V.V. 88" Palmer Quetch Unit.
2—V.V. & G.M.C. 60" Palmerettes.

PADDERS - MANGLES - QUETCHES

1—V.V. 60" 2-roll Dye Padder, rubber rolls.
2—2-roll Padders, 94" & 98".
2—Butterworth 50" Starch Mangles.
3—Butterworth & Morrison 2 & 3-roll Quetches, 50"-72".

REAMERS - BATCHERS

5—Textile 50", 60", 66", & 72" Reamers.
4—2-Roll B.B. Batchers, 50"-72".

FLAT FOLDERS—DOUBLERS

2—E & H Flat Folders, 50"-60", with motors.
3—P & W & Windle Doublers, 50"-65".
1—96" Doubler & Folding machine.

COATING MACHINES

3—Plastic & Rubber Coaters, 50"-72".

DECATERS

1—P & W 72" Full Decater.
1—P & W 72" Semi-Decater.

WASHERS

1—V.V. 6-Comp. Full Width Washer, 60".
1—V.V. 8-comp. full width Washer, 50".
1—3-comp. monel rotary Washer.
2—Cloth Washers, 4 strings.

BRUSHING MACHINES

2—74" Rotary Cloth Brushers.

CALENDERS

1—V.V. 3-Roll Calender, 62".
1—Farrell 3-roll Calender, 65".
1—Perkins 2-Roll Hydraulic 65" Calender.

SHEARS

3—P & W 2-Blade Shears, 66½".
1—P & W. Single Blade Shear, 60".

DYE BECKS—DYE JIGGS

1—Butterworth Scouring Jigg.
10—Morrision & V.V. 6'-12' Dye Becks, S.S. lined.
4—Textile 50"-60" S.S. Lined Jiggs

PRINT MACHINES

1—Franklin 45" 3-color Printer, complete with mandrels, rollers and jack.
1—R.B.&F. 4-color Print machine, 42".

TUBERS & MEASURING MACHINES

3—Tubing & Measuring Machines, 50"-60".

WEAVING MACHINES

150—C & K 4 x 1 automatic, 47½", looms.
100—Draper Mod. D. auto. looms, 40", motor driven.

KNITTING MACHINES

Lot of Hosiery Knitting Machines.
25—Cooper Spring Needle Machines.

PRINT MACHINE EQUIPMENT

BTA & BTS motors, 25, 35 & 50 HP, mandrels, star gears, doctor blades.

AGERS

2—Butterworth Cast Iron Agers, 18' long.

PREPARATORY MACHINES

2—Sargent & C & M Burr Pickers.
4—Shoddy Rag Pickers.
1—Saco Lowell Vertical Opener.
1—Sargent Cotton Picker.

CARDING MACHINES

15—Sets D & F Worsted Cards, 48" x 48".
4—Bramwell & Harwood Feeds, 48"-60".
8—Whitin D-2 Combers
5—Hetherington Sliver & Ribbon Lap Machines.
2—5-cylinder 48" x 48" Shoddy Cards, equipped with Bramwell Feeds & Metallic breasts.

SPINNING & WINDING MACHINES

35—Whitin & Mason Spinning Frames, Band & Tape Drive.
15—H&B Drawing Frames, 12" coilers.
6—Platt Worsted Mules.
1—Sipp Double Deck Winder.
1—P.S. Ring Twister, 5" band drive.
1—Fly Twister, 6½" Traverse, 4¼" dia.
2—Foster #101 Cone Winders.
8—Atwood 5-B Twisters.
12—Universal #50 & #90 Winders.
2—Sipp 72" Warpers.
4—Jack Spoolers, complete with creels.
7—H & B Speeders, 5" baube.

"AMERICA'S BEST BUYERS" WANT YOUR IDLE EQUIPMENT

SINGLE ITEMS TO COMPLETE PLANTS

SEND YOUR LIST NOW

THE KEY TO SAVING TIME AND MONEY

FOR OVER A QUARTER CENTURY SYMBOL OF CONFIDENCE

CONSOLIDATED PRODUCTS COMPANY, INC.

Address All Textile Inquiries to

TEXTILE DIVISION, PATERSON 2, N. J.

33-41 BERGEN ST. Tel. ARmory 4-6540

15 PARK ROW • NEW YORK CITY 7 • N. Y.

AGER, Tower
AGITATOR, 2 propeller
AGITATOR, Porter, Whirl Pool
BEAMERS, new 60" x 60" motorized
BEAMER, 60" Van Vlaanderen
BOIL OFF UNIT, Van Vlaanderen 40'
CALENDAR 4 roll, 50" Hydraulic
COTTAGE STEAMER, 14' x 84"
DECATER, Semi C&M 72" x 12" dia.
DECATER, full Gessner
DECATER, P&W 50" x 36" dia.
DRIVES, Reeves #000
DRY CANS 12 copper 50" x 28" vert.
DRY CANS, 144" x 23" vert. copper
DRYER, Loop P & S 30' x 84"
DYE BECKS Stainless steel 4' to 20'
DYE TUBS, wood, 6' and 12', comp. motorized
DYEING MACHINE, KW, 28 stick, 48" wd. Monel
DYEING MACHINE, Smith Drum 3 paddle
DYEING MACHINE, SMITH DRUM Pocket type
EMBOSSER 54" Textile 2 pair rolls, Hydro.
EXPANDERS, rubber face 72"
EXTRACTORS, Beam 50" & 60" BB
EXTRACTORS, Open top Tolhurst 40"
EXTRACTORS, VV Copper basket 54"
EXTRACTORS, VV Rubber basket 60"
EXTRACTOR, Gessner Vacuum 72"
FANS, Exhaust 3 blade propeller 30"-36"-48"
FLOCK STENCIL MACHINES, with patterns.
FLAT FOLDERS, Elliott & Hall Adjustable
FULLING MILLS, Hunter #10
INFRA RED units, complete with blowers
INSPECTION TABLES, with DC motors 47"
JIGGS, monel lined 60" St. St. 50" & 60"
MEASURING MACHINE P & W Model AWC
MOTORS, BTA, 7½ HP 40 HP
MOTORS, over 300 GE ¾ to 5 HP 220 volt
PACKAGE DYEING MACHINE, Obermaier
PALMER, 62"
PALMER QUETCH, 54" Butterworth
PALMERETTE, 60" face, General Machine
PRINT MACHINE, 3 color 60"
PRINT MACHINE, 1 color 60"
PRINT MACHINE, 10" sample or Ribbon
QUETCH, 3 roll Morrison 60" ball bearing
SEWING MACHINES, Arlington, Bicycle
SEWING MACHINES, Merrows 60ABB and 60D3B
SCUTCHER, 72" Birch Bros. with # 3 Nash Pump
SHEAR, Hermas 4 knife 70" wide
SQUEEZE ROLLS, 12" x 10"
TENTER FRAME, W & J 30' x 50" wide
TENTER FRAME, Morrison st. st. clips 30 x 60"
TIGERS, Dry P&W & C&M
TUBER, with Examining board 80"
TUBERS, Paterson, Variable speed motors
TUBER, VV with doubling attachment
WARP COMPRESSOR CREEL
WASHERS, Slop, New Stainless steel
WASHER, GL ROPE Type
WASHER, 3 compartment open
WOOL WASHERS, J. Hunter 6 & 8 ft.
WATER SOFTENER & FILTERS

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

CADGENE MACHINERY CO.
5th Ave. & McLean Blvd.
P. O. Box 1206 Paterson 4, N. J.
Sherwood 2-6577

FOREIGN MILL OWNERS

In buying Used American Made Textile Machinery, you need protection and advice that you can depend on. We are thoroughly experienced practical textile mill men that know our business.

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2 Riley Jones heavy duty, single retort, side dumping type, and auxiliaries. Practically new.

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100—Draper Modified D Looms, 39" cloth, motor driven.

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15—Universal Winders with Bunch Builders.

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2—60" Steam Driven Centrifgal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.

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1—Rice, Barton & Fales Dye Jigg, 50" Roll, Wooden Tub, Metal-lined, complete with 2 Motors, 230 Volt, D.C.

4—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive with 1 DeLaval Worm Reduction Gear Unit, Direct connected to Lincoln 10 H.P. A.C. Motor, 550 volts, 60 cycle, 3 phase, 1200 RPM, with Control.

1—National Dyeing Machine 24' long, 11' high, 84" wide, complete Drive and Traps.

TENTER FRAMES

1—Textile 40' Pin Tenter Frame, Link Belt Drive, #3 Reeves General Electric 5 HP, 60 Cycle, 3 Phase Motor, 60" wide, General Electric Guiders, Steam Heating Coils.

1—30' Clip Type Butterworth Tenter Frame, with Tenter Clips.

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1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

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1—Stainless steel lined 18" dye beck Tank 18" x 30" x 96" Single Slot reel, Brass Idler rolls. Geared link chain drive.

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1—Textile 58" Roller bearing Scutcher.

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120—Circular Rib Knitting Machines, 10" to 18", 8 feed, 10 cut to 13 cut.

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Singer, Union Special, Merrow, Metropolitan and Willcox & Gibbs Flatlocks.

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34—Veeder-Root, Cloth Counters.

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7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallon capacity.

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G. E. Steam flow meter.

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1—72" Decator, with Blanket, Nash Vacuum Pump and Motor.

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2—R. B. & F. 42" Multicolor printing machine.

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1—#1 Nash Engineering Pump, Type 960.

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2—50" Van Vlaanderen Button Breakers.

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1—Hoey Tenter Chain, 1100 Textile Brass Tenter Clips.

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These machines were built new in 1942.

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1—4 Color Rice-Barton & Fales Printing Machine with 46" Cylinder like new.
55—New Copper Rollers 48"x16".
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1—Large Control Unit.
1—Set of 6 copper Syphon Type Tinned Dry Cans. Complete with 2 batcher rolls set with complete back rigging consisting of Brass guiding Rollers Etc. Entire Unit is run on steel chain drive.
1—60" Tubing Machine (Brass Rollers).
1—60" Two Roll Brushing Machine with double batcher Rolls.
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Four Proctor & Schwartz automatic hosiery boarding machines equipped with aluminum forms for boarding women's hosiery.

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FOR SALE

20—100 spindle Federal Spinners. Each machine equipped with individual motor drive. Reply to

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20—DRAPER MODEL-E-LOOMS
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36 and 38 in. Wide
Equipped with Stop Motions, Fittings Etc.
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All metal with Parafine Attachments Excellent Condition

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(Additional Wanted Ads on Page 260)

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Send complete details.

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WANTED

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BUTTERWORTH CALENDER

7 ROLLS—80" FACE

3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

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CAMERON SLITTING AND ROLL WINDING MACHINE

Type No. 6—62" Wide Preferred

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1—48" Sargent Intermittent Rag Duster, can be used for dusting rags, wool or card waste, capacity 800 to 1,000 pounds. Floor space required 5' 8" x 5' 10" x 9' high. Requires 10 H.P. to operate. Machine is in good condition. Write

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3—Sets Cards, Shoddy, 2 cylinder 60 x 48 and 48 x 60 complete.
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4—Sets Cards, Worsted, 2 cylinder 48 x 48 and 60 x 48 complete.
5—Combers, Worsted, complete with circles.
4—Condensers, Rig Rub, for 48" Woolen Cards.
1—Draw Box 2 spindle 14 x 9.
1—Duster, Intermittent Rag, 48", capacity 800 to 1000 pounds.
2—Feeds, Bramwell and Picker, 36" and 48".
2—Feeds, Bramwell, for Cards 40" and 54".
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1—Garnett 2 cylinder 60 x 20.
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43—Looms, Draper, D 42" cloth, 8 and 12 harness.
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14—Looms, C&K 92" 4 x 4, Box, 25 harness, motor driven.
20—Looms, C&K 76", Automatic Cam, motor driven.
12—Looms, C&K, Woolen, 82" 4 x 4 25 harness, motor driven.
20—Looms, C&K 92", Automatic Cam, Motor driven.
30—Looms, C&K 56" 4 x 1 box.
50—Looms, Draper, 90" Model L Sheeting type.
24—Looms, Stafford 72" 2 x 1 Box.
18—Looms, C&K 79½" 4 x 1, Box.
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2—Mules, 650 Splindles each for Worsted.
2—Mules, 288 Spindles each 2¼" Gauge.

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75 Automatic 4x1 Looms, complete with WET and DRY FINISHING. Winders and Accessories in excellent condition.

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5—Winders, Foster, #30—100 Spindles each.
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1—Ager 50" cloth.
1—Brush McCreery 54", 2 roll with blower.
1—Brush Vertical 62", 6 rolls, Calender rolling up head.
1—Calender 42" Friction 3 roll.
1—Calender 50" Cotton 3 roll.
1—Calender 60" Friction 3 roll.
1—Can Dryer 144" 4 vertical stacks, 9 cans each, complete motor and drive.
1—Decatur 72" complete with pump.
1—Decatur, Semi 72" with pump and motor.
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1—Measuring Machine 66" with clock.
5—Nappers 66" to 90" width, 20, 24, and 36 roll units.
2—Presses, Rotary 66" and 78" Double Bed Units.
3—Shears Single Blade Units 36" to 80" widths.
2—Shears Double Blade Units 66½".
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2—Tenter Frames, complete with Housing, 120' x 60", 121' x 72".
1—Steamer, Open, 68" x 21", equipped with blanket.
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6—Universal Winders—Model 6-C
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or Equivalent

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Electrically heated or direct steam.
Give full particulars.

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JANESVILLE, WISCONSIN

WANTED TO PURCHASE

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Up to 125 Looms

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60-Inch Diameter—60-Inch Face
All Metal

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Model 60-D3-B. Must be in good condition. Advise Price. Immediate delivery.

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1—2 spindle Gill 14 x 9
4—40 spindle Dandy Rollers 8 x 4

Write full details to

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WANTED

15 C&K automatic silk looms 2x1, 52" reed space—

W-504, Textile World,
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56 Looms, Crompton & Knowles, 60" reed space, 4 x 4, roller bearing shock absorber, dobbies, individually motor driven, complete with 40 - 1304 hook double lift jacquard machines, harnesses, etc., and 16 - 2608 hook double lift jacquard machines, harnesses, etc., Oswald lever cop winders, Universal quillers, Sipp warpers, winders, card cutter, jacquard cards designs, etc. In other words, a complete plant running at present. All excellent machinery. Can be operated right where it is, or will sell to be removed. Plant located in Northern New Jersey.

24—Crompton & Knowles 4 x 4 - 48" Jacquard looms

30—Crompton & Knowles 2 x 2 - 48" Jacquard looms

Above looms complete with paperless beams, electric warp stop motion, pick counter, individually motor driven, extended bottom shafts for double lift Jacquards

100—Crompton & Knowles-600 hook double lift Jacquard machines.

16—56" 4 x 4 Crompton & Knowles Jacquard looms

200—#90 Universal quillers or coppers, with or without bunch builders, belt driven or motor driven.

Sipp or Atwood winders to wind from skein to spool

Sipp or Eastwood warpers and creels

50—45" reed space, Draper automatic looms, 2 harness, roller motion gooseneck cutters, Roper let-offs, postive feelers, worm take ups.

23—75½" reed space Stafford Automatic bobbin change looms, 2 harness roller top, ratchet take-up, friction let-offs, positive feelers.

16—64½" reed space Stafford looms as above described

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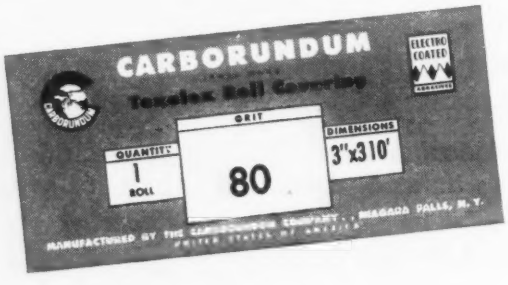

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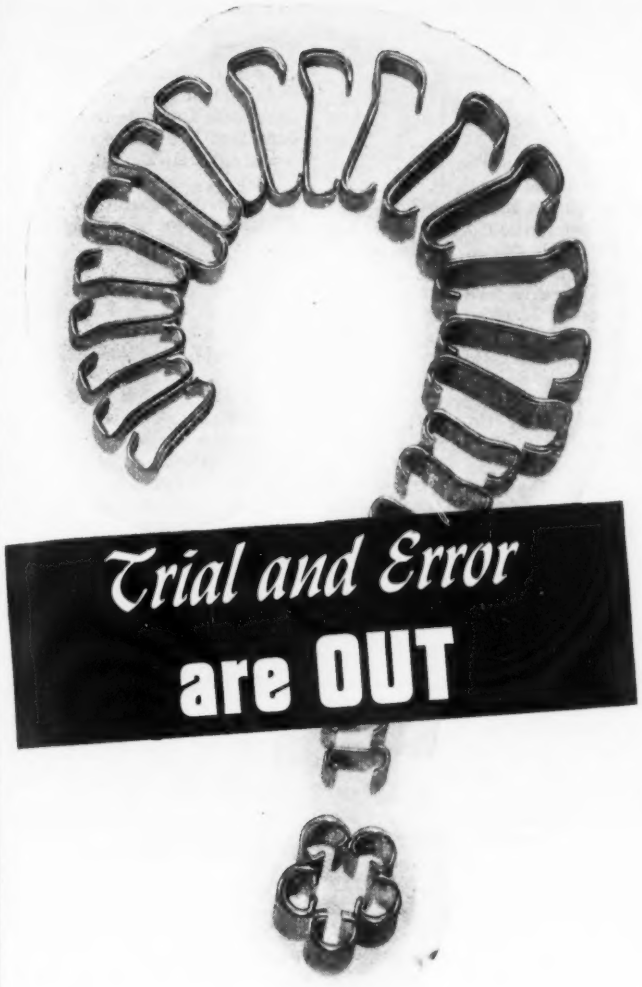

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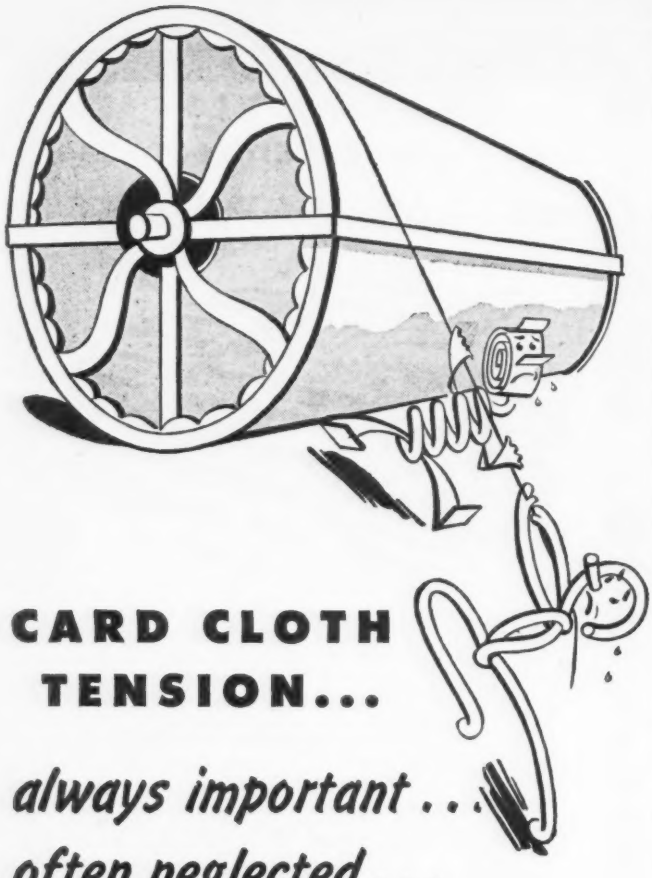

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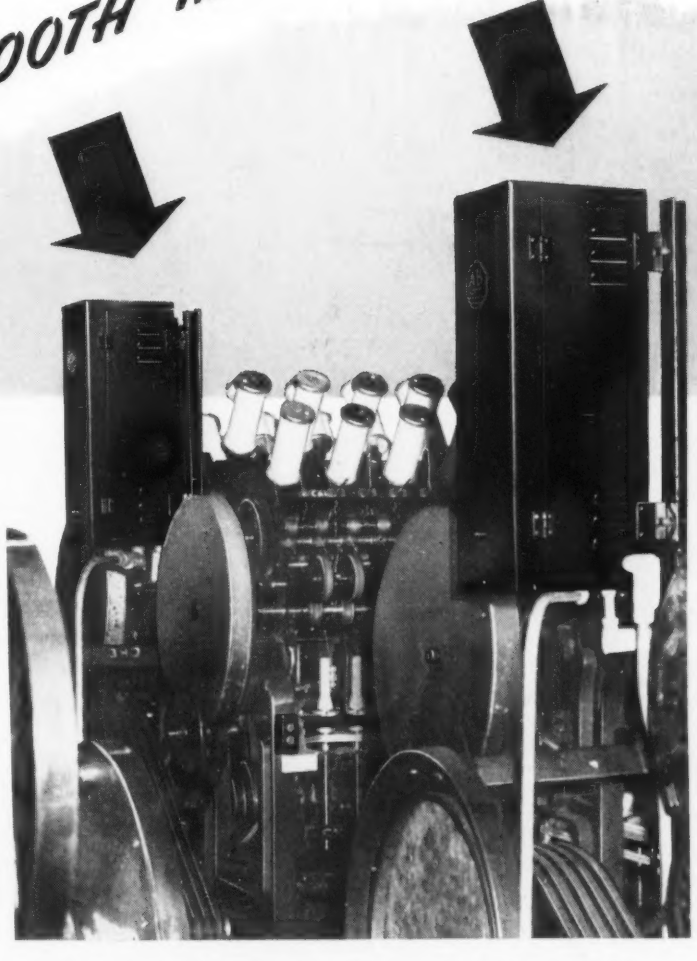

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